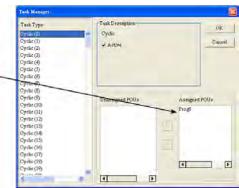
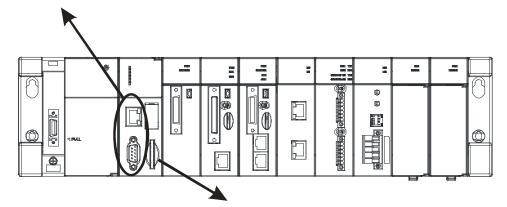
1.2 Overview

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.

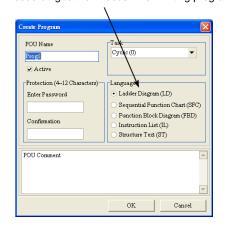


An AH500 series CPU module is a medium type of advanced controller with built-in communication ports. It provides a strong network function for users, and users can create connection among devices in the network through software.



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.

| . Danth | | | | | / | | | |
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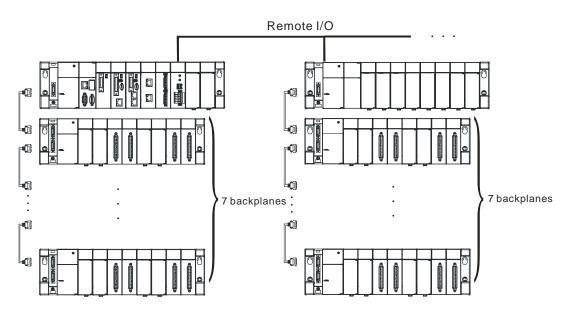
1.3 Characteristics

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

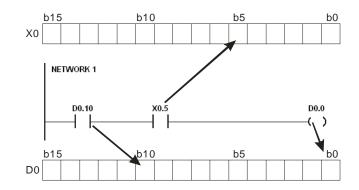
• Program capacity

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

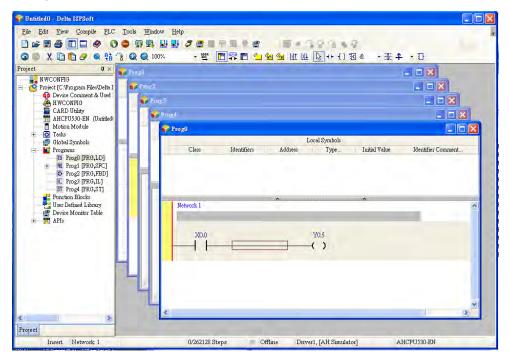
• An AH500 series CPU module is equipped with devices which can be used conveniently in a program. Users can flexibly specify a bit in a word device, e.g. D0.0, X0.0, and Y0.0. Owing to that bits in a word device can be specified, these bits can function as contacts and coils.



 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



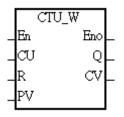
- The AH500 series CPU module supports IEC 61131-3.
- The programming languages which are supported are instruction lists (IL), structured texts (ST), ladder diagrams (LD), sequential function charts (SFC), and function block diagrams (FBD).

| Create Program | × |
|--|--|
| POU Name Proses Protection (4~12 Characters) | Task Cyclic (0) |
| Enter Password Confirmation | Language • Ladder Diagram (LD) Sequential Function Chart (SFC) Function Block Diagram (FBD) Instruction List (IL) Structure Text (ST) |
| POU Comment | × |
| | OK Cancel |

 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.

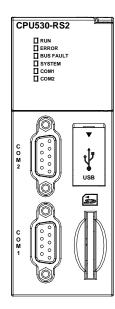


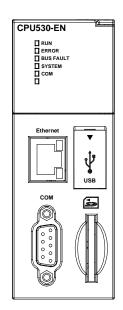
- A function block is a program element equipped with the operation function. It is similar to a subroutine, and is a type of POU (Program Organization Unit). It can not operate by itself, and has to be called through the program POU. After the related parameters are transmitted, the function defined 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

| Task Type | | Task Description | | OK |
|-------------|----|--|----------------|---------|
| Cyclic (0) | ~ | Cyclic | | - On |
| Cyclic (1) | | and the second sec | | Cancel |
| Cyclic (2) | - | Active | | |
| Cyclic (3) | | | | |
| Cyclic (4) | | | | |
| Cyclic (5) | | | | |
| Cyclic (6) | | | | |
| Cyclic (7) | | | | |
| Cyclic (8) | | | | |
| Cyclic (9) | | Unassigned POUs | Assigne | d POIIs |
| Cyclic (10) | | Sumpling to co | | 4.000 |
| Cyclic (11) | | | Prog0 Prog1 | |
| Cyclic (12) | | | Prog2 | |
| Cyclic (13) | | | Prog3 | |
| Cyclic (14) | | | Prog4 | |
| Cyclic (15) | | | - | |
| Cyclic (16) | | | | |
| Cyclic (17) | | | | |
| Cyclic (18) | | | 141 | |
| Cyclic (19) | - | | 121 | |
| C | 20 | | | |

- 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

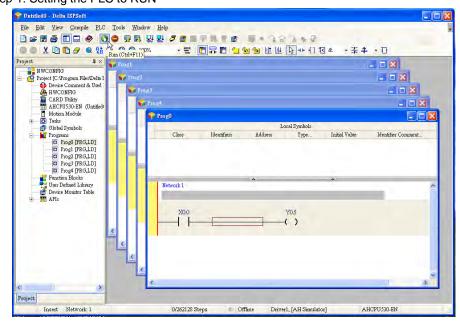
• The AH500 series I/O modules support the on-line uninterruptible hot swap. When the system runs, users can replace the module which breaks down without disconnecting the module. After the module is replaced, the new module runs normally. Users do not need to set the module manually or switch the state.



14. Supporting the on-line debugging mode

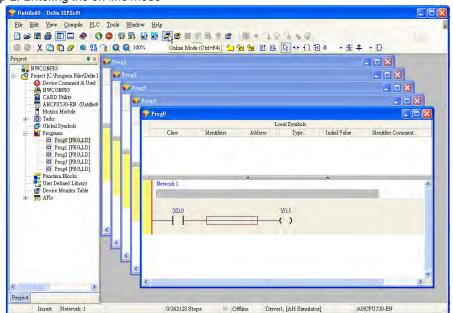
- After a single instruction step has been complete, or after a breakpoint is specified, users can easily find the bug in the program by means of the on-line debugging mode supported by the AH500 series CPU module.
- If users want to enter the debugging mode, the CPU module must run. After users enable 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

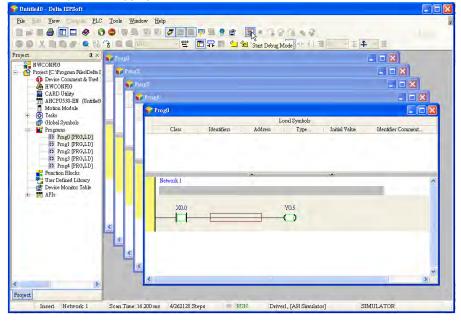




Step 2: Entering the on-line mode



Step 3: Entering the debugging mode

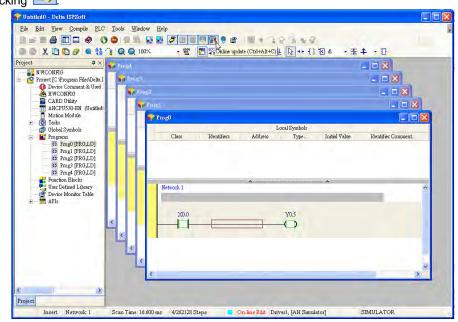


15. Supporting the on-line editing mode

- 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

| Untitled0 - Delta ISPSoft | | |
|---------------------------------------|--|-------------------------|
| File for Yiew Counts PLC Tools Window | | |
| | 🗳 🕼 Online Edit Mode (Ctrl+Alt+E) | |
| oject. 🗛 🗙 🏹 Proge | | |
| Project [C:\Program Files\Delta I | | |
| 🚯 Device Comment & Used : | , | |
| CARD Utility | | |
| Motion Module | | |
| + 🖸 Tasks | Prog0 | |
| Global Symbols Programs | Class Identifiers Address Type Initial V | alue Identifier Comment |
| © Prog0 [PRG,LD] © Prog1 [PRG,LD] | | |
| 🛤 Prog2 [PRG,LD] | | |
| C3 Prog3 [PRG,LD] C3 Prog4 [PRG,LD] | | |
| Function Blocks | ×. | |
| 🖉 Device Monitor Table | Network 1 | ^ |
| 🗄 🔤 🖬 APIs | | |
| | X0.0 Y0.5 | |
| <u>×</u> | | |
| | | |
| < | | |
| <u>x</u> | | |
| | < | (X) |
| | | |
| roject | | |
| Insert Network 1 Scan Time: 156 | 00 ms 4/262128 Steps RUN Driver1, [AH Simulator] | SIMULATOR |

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% |
| Operating humidity | No condensation |
| Storago humidity | 5~95% |
| Storage humidity | No condensation |
| Vibration/Shock International standards IEC 61131-2, IEC 68-2-6 (TEST Fc)/ | |
| resistance | 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 | Remark |
|---|--|----------------------|--|
| | -RS2 | -EN | |
| 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. |
| | IEC 61131-3 | | |
| Programming language | Ladder diagrams, functio instruction lists, structure function charts | | |
| Instruction execution speed | 3K Steps/ms | | |
| Number of instructions | Approximately 666 instru | ctions | |
| 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 timed interrupts; 2 comm | · · · · | |



| Item | AHCPU500/510/520/530 -RS2 | AHCPU500/510/520/530 -EN | Remark |
|------------------------------|---|----------------------------------|--|
| | external 24 V low-voltage interrupts) | interrupt; 212 external | |
| 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~ AHCPU510: 2048 (X0.0~ AHCPU520: 4096 (X0.0~ AHCPU530: 8192 (X0.0~ | X127.15) X255.15) X511.15) | |
| Output relays [Y] | AHCPU500: 1024 (Y0.0~ AHCPU510: 2048 (Y0.0~ AHCPU520: 4096 (Y0.0~ AHCPU530: 8192 (Y0.0~ | Y127.15) Y255.15) | |
| Internal relays [M] | 8192 (M0~M8191) | | |
| Link registers [L] | AHCPU500: 16384 (L0~L AHCPU510: 32768 (L0~L AHCPU520: 65536 (L0~L AHCPU530: 65536 (L0~L | _32767) _65535) | |
| 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 | TwoOneRS-232/RS-485/RS-422RS-232/RS-485/RS-422communication portscommunication 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

| ltem | AHCPU511-RS2 | AHCPU511/521/531 -EN | Remark |
|----------------------|--|----------------------|--|
| Execution | The program is executed | l 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 | | |



| ltem | AHCPU511-RS2 AHCPU511/521/531 -EN | Remark |
|-----------------------------------|---|-----------------------|
| Instruction execution speed | 12K Steps/ms | |
| Number of instructions | Approximately 666 instructions | |
| | 1-32000 | |
| Constant scan cycle (ms) | (The scan cycle can be increased by one | Setting the parameter |
| | millisecond.) | |
| | 96K Steps (AHCPU511) | |
| Program capacity (step) | 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 | An extension cable connects two backplanes. | |
| backplanes | | |
| Maximum number of | 20 (AHCPU511) 36 (AHCPU521) | |
| modules which can be installed | 68 (AHCPU531) | |
| Installed | AHCPU511: 2 backplanes (1 main backplane+1 | |
| | extension backplane) | |
| Maximum number of | AHCPU521: 4 backplanes (1 main backplane+3 | |
| backplanes which can be | extension backplanes) | |
| connected | AHCPU531: 8 backplanes (1 main backplane+7 | |
| | extension backplanes) | |
| | 283 tasks (32 cyclic tasks; 32 I/O interrupts; 4 | |
| | timed interrupts; 2 communication interrupts; 1 | |
| Number of tasks | external 24 V low-voltage interrupt; 212 external | |
| | interrupts) | |
| | | Number of |
| | AHCPU511: 1280 | inputs/outputs |
| Number of inputs/outputs | AHCPU521: 2304 | accessible to an |
| | AHCPU531: 4352 | actual input/output |
| | | module |
| | AHCPU511: 4096 (X0.0~X255.15) | |
| Input relays [X] | AHCPU521: 8192 (X0.0~X511.15) | |
| | AHCPU531: 8192 (X0.0~X1023.15) | |
| | AHCPU511: 4096 (Y0.0~Y255.15) | |
| Output relays [Y] | AHCPU521: 8192 (Y0.0~Y511.15) | |
| Intornal raisus [M] | AHCPU531: 8192 (Y0.0~Y1023.15) | |
| Internal relays [M] | 8192 (M0~M8191) AHCPU511: 49152 (L0~L49151) | |
| Link registers [L] | 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) | |
| | AHCPU500:16384 (D0~D16383) | |
| Dete register (D) | AHCPU510: 32768 (D0~D32767) | |
| Data register [D] | 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) | |
| opecial auxiliary feldy [SW] | AHCPU511-RS2: 4096 (SM0~SM4095) | |
| Special data register [SR] | AHCPU511/521/531-EN: 2048 (SR0~SR2047) | |
| opecial data register [or] | AHCPU511-RS2: 4096 (SR0~SR4095) | |
| Serial communication port | Two One | |
| contai communication port | RS-232/RS-485/RS-422 RS-232/RS-485/RS-422 | |

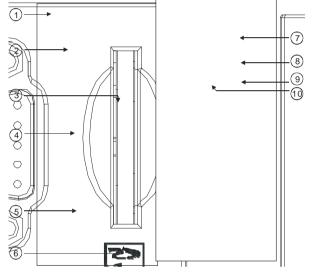


| Item | AHCPU511-RS2 | AHCPU511/521/531 -EN | Remark |
|-------------------|---|----------------------|--------|
| | communication ports | communication port | |
| Ethernet port | - | 10/100 M | |
| USB port | Mini USB | | |
| Storage interface | SD Card (SD 2.0) | | |
| Remote RUN/STOP | The setting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

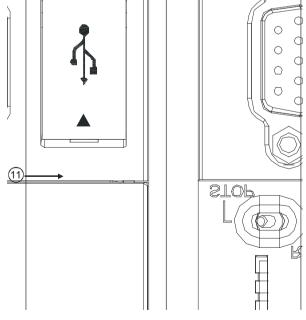
2.2.3 Profiles

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 <u>RS-232C/RS-422A/RS</u>-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 |

|--|

8. RST button

9. CLR button

| 10. RUN | /STOP switch | 11. COM2 (for AHCPU5xx-RS2) | | | | | |
|-------------|---|---|--|--|--|--|--|
| Number | Nome | Description | | | | | |
| Number 1 | Name Model name | Description Model name of the CPU module | | | | | |
| 1 | | Operating status of the CPU module | | | | | |
| | RUN LED | ON: The user program is being executed. | | | | | |
| | indicator | OFF: The execution of the user program stops. | | | | | |
| | indicator | Blinking: The user program is in a debugging mode. | | | | | |
| | | Error status of the CPU module | | | | | |
| | ERROR LED | ON: A serious error occurs in the system. | | | | | |
| | indicator | OFF: The system is normal. | | | | | |
| | | Blinking: A slight error occurs in the system. | | | | | |
| | | Error status of the I/O bus | | | | | |
| | BUS FAULT | ON: A serious error occurs in the I/O bus. | | | | | |
| | LED indicator | OFF: The I/O bus is normal. | | | | | |
| 2 | | Blinking: A slight error occurs in the I/O bus. | | | | | |
| | | System status of the CPU module | | | | | |
| | SYSTEM LED | ON: The external input/output is forced ON/OFF. | | | | | |
| | indicator | 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 | | | | | | |
| | | Communication status of the communication port | | | | | |
| | | OFF: There is no communication through the communication port. | | | | | |
| | | Blinking: There is communication through the communication port. | | | | | |
| | indicator | | | | | | |
| 3 | USB port | Providing the mini USB communication interface | | | | | |
| 4 | Ethernet port | Providing the Ethernet communication interface (for AHCPU5xx-EN) | | | | | |
| 5 | СОМ | Providing the RS-232/RS-485/RS-422 communication interface | | | | | |
| 6 | SD slot | Providing the SD interface | | | | | |
| | | Function which the system executes | | | | | |
| | | SW1 OFF: No action (default) | | | | | |
| | | ON: Write protection | | | | | |
| | | OFF: No action (default) | | | | | |
| | | ON: The system is restored when the CPU module is supplied with | | | | | |
| | | SW2 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.) | | | | | |
| | | OFF: No action (default) | | | | | |
| 7 | DIP switch | ON: It is used with the CLR button to backup the system. (The user | | | | | |
| | | SW3 program, the CPU paramter, the module table, and the setting | | | | | |
| | | values in the devices are backupped from the memory card to the | | | | | |
| | | CPU module.) | | | | | |
| | | It is used with SW3. | | | | | |
| | | OFF: When the system is backed up, the values in the devices are | | | | | |
| | | SW4 backed up. | | | | | |
| | | ON: When the system is backed up, the values in the devices are not | | | | | |
| | | backed up. | | | | | |
| | | Resetting the CPU module, and restoring it to the default factory value | | | | | |
| 8 | RST button | 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 | | | | | |
| | | סוסמווויץ גווס אמועב ווו גווב ומנטובע עבאוטב | | | | | |



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

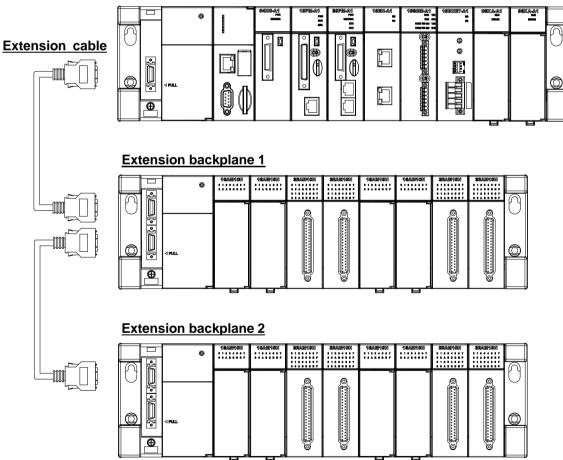
2.3 Basic System Configuration

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.

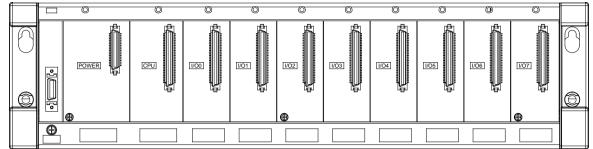


Main backplane



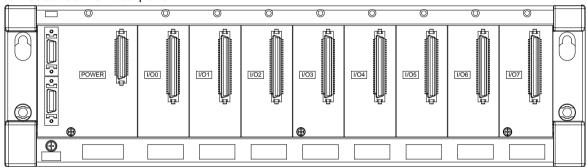
2.3.2 Configuring a Main Backplane

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. (There are two types are six-slot extension backplanes. Eight AH10EN-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.

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

| • | AH500 system | configuration |
|---|--------------|---------------|
|---|--------------|---------------|

| Configuration | Description | | | | | |
|-----------------------|--|--|--|--|--|--|
| | There is one main backplane in an AH500 system. | | | | | |
| | Four-slot main backplane: AHBP04M1-5A | | | | | |
| Main backplane | Six-slot main backplane: AHBP06M1-5A | | | | | |
| | Eight-slot main backplane: AHBP08M1-5A | | | | | |
| | Twelve-slot main backplane: AHBP12M1-5A | | | | | |
| | There are seven extension backplanes at most in an AH500 system. | | | | | |
| Extension backplane | Six-slot extension backplanes: AHBP06E1-5A | | | | | |
| | Eight-slot extension backplanes: AHBP08E1-5A | | | | | |
| | There are four types of lengths. | | | | | |
| | AHACAB06-5: 60 cm | | | | | |
| Extension cable | AHACAB10-5A: 1 m | | | | | |
| | AHACAB15-5A: 1.5 m | | | | | |
| | AHACAB30-5A: 3 m | | | | | |
| | 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, | | | | | |
| Power supply module | 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 | | | | | | |
| Analog I/O module | Digital I/O modules, analog I/O modules, and temperature measurement | | | | | |
| Temperature | modules can be installed in an AH500 system unlimitedly. | | | | | |
| measurement module | | | | | | |
| Motion control module | Motion control modules can only be installed on a main backplane. | | | | | |
| | 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 | | | | | |
| Network module | 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.)

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

| Model | AH16AM10N | AH32AM10N | AH32AM10N | AH32AM10N | AH64AM10N | AH16AP11R | AH16AP11T | AH16AP11P |
|----------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Item | -5A | -5A | -5B | -5C | -5C | -5A | -5A | -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.)

| | Model | AH16AM30N-5A | | | |
|----------------------|----------------------|--|--|--|--|
| Item | | AH IOAMIJON-JA | | | |
| Number of | inputs | 16 | | | |
| Connector | type | Removable terminal block | | | |
| Input type | | Digital input | | | |
| Input form | | Alternating current | | | |
| Input curre | ent | 120 V AC and 4.5 mA; 240 V AC and 9 mA | | | |
| Action | OFF→ON | >79 V AC | | | |
| level | $ON \rightarrow OFF$ | <40 V AC | | | |
| Response | OFF→ON | 15 ms | | | |
| time ON→OFF | | 30 ms | | | |
| Electrical isolation | | Optocoupler | | | |
| Input displ | ay | 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.)

| | Model | | | AH16AR10N-5A | | | | | |
|------------------|---------------------|--|---|-------------------|--------------------|-----------------|--|--|--|
| Item | | | | | | | | | |
| Number of | inputs | 16 | | | | | | | |
| Input powe | er form | Direct current | | | | | | | |
| Connector | type | Removable terr | ninal block | | | | | | |
| Input type | | Digital input | | | | | | | |
| Input form | | Direct current (s | sinking or sourcir | ng) | | | | | |
| Input curre | ent | 24 V DC, 5 mA | | | | | | | |
| Action | OFF→ON | >15 V DC | | | | | | | |
| level | ON→OFF | <5 V DC | | | | | | | |
| | 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 | | | |
| Response time | 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 impe | dance | 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 i | solation | Optocoupler | | | | | | | |
| Input displ | ay | When the optoo | coupler is driven, | the input LED inc | dicator is ON. | | | | |
| Trigger for | an interrupt | | riggered when th n low to high or fr | | in a signal from I | ow to high/from | | | |



| 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

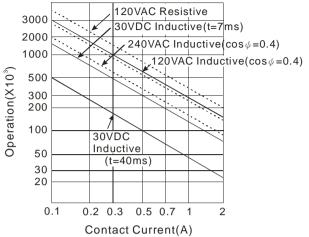
| | Model | AH16AN01R | AH16AP11R | AH16AN01T | AH16AP11T | AH16AN01P | AH16AP11P | AH16AN01S | | |
|-------------------|-------------|------------------------------------|--------------------------|--------------------------|-------------|--------------------------|--------------|-------------------|--|--|
| Item | | -5A | -5A | -5A | -5A | -5A | -5A | -5A | | |
| Number of outputs | | 16 | 8 | 16 | 8 | 16 | 8 | 16 | | |
| Connector type | | | Removable terminal block | | | | | | | |
| Output type | | Rela | ay-R | Transistor- | T (sinking) | Transistor-F | o (sourcing) | TRIAC-S | | |
| Voltage spec | cifications | 250 V AC, and below 30 V DC | | 12~30 V DC ^{*2} | | 12~30 V DC ^{*2} | | 120/240 V AC | | |
| | Resistance | 2 A/o | | 0.5 A/output | | 0.5 A/output | | 0.5 A/output | | |
| | | (5 A/COM) | | (4 A/COM) | | (4 A/COM) | | (2 A/COM) | | |
| Maximum load | 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 | Resistance | 1 Hz | | 100 Hz | | 100 | Hz | 10 Hz | | |
| output | Inductance | 0.5 Hz | | 0.5 Hz | | 0.5 Hz | | - | | |
| frequency*1 | Bulb | 1 Hz | | 10 Hz | | 10 Hz | | 10 Hz | | |
| Maximum | OFF→ON | 10 | 10 ms | | 25 | | 0.5 | | | |
| Response time | ON→OFF | 10 | | 0.5 ms | | 0.5 ms | | AC cycles | | |

| | Model | AH32AN02T | AH32AN02P | AH32AN02T | AH32AN02P | AH32AN02T | AH32AN02P | AH64AN02T | AH64AN02P |
|------------------------------|-----------------|----------------|------------------------|-----------|-----------------------------|-----------|-----------|-----------|-----------|
| Item | | -5A | -5A | -5B | -5B | -5C | - 5C | -5C | -5C |
| Number of o | outputs | 32 | 32 | 32 | 32 | 32 | 32 | 64 | 64 |
| Connector t | уре | - | ovable al block | DB37 c | onnector | | Latch c | onnector | |
| Output type | | | | | Transistor– Transistor-F | | | | |
| Voltage specifications | | | 12~30 V DC*2 | | | | | | |
| Maximum | Resistance | | 0.1 A/output (1 A/COM) | | | | | | |
| Maximum load | Inductance | Not applicable | | | | | | | |
| Ioau | Bulb | Not applicable | | | | | | | |
| Maximum | Resistance | | | | 100 | Hz | | | |
| output | tput Inductance | | | - | | | | | |
| frequency ^{*1} Bulb | | | - | | | | | | |
| Maximum Response | | | | | 0.5 | ms | | | |
| time ON→OFF | | | | | 0.0 | | | | |

*1: The scan cycle affects the frequency.

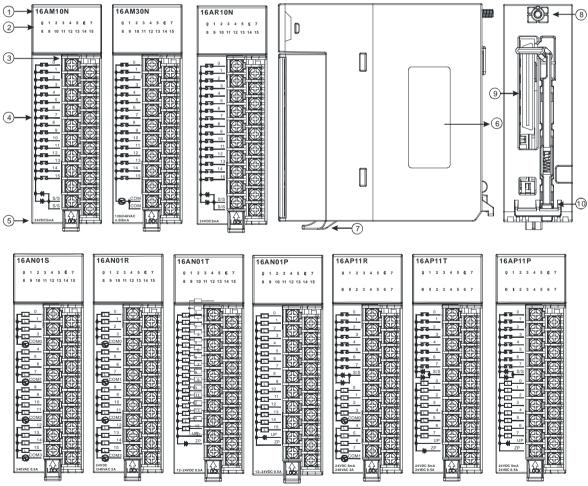
*2: The terminals UP and ZP needs to be connected to the 24 V DC auxiliary power supply (-15%~+20%), and the rated current consumption is 1 mA/output.

*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

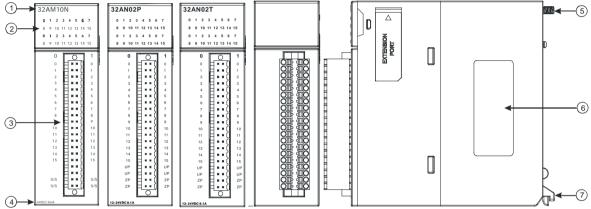


| Number | Name | Description |
|--------|------------------|---|
| 1 | Model name | Model name of the module |
| 2 | Input/Output LED | If there is an input signal, the input LED indicator is ON. |
| 2 | indicator | If there is an output signal, the output LED indicator is ON. |
| 3 | Removable | The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

2

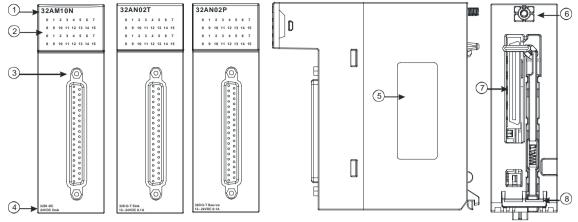
| Number | Name | Description |
|--------|------------------------------------|--|
| | terminal block | The outputs are connected to a load which will be driven, e.g. a contact, or a solenoid valve. |
| 4 | Arrangement of the input/output | Arrangement of the terminals |
| 4 | terminals | Anangement of the terminals |
| 5 | Description of the | Number of inputs/outputs and specifications |
| | inputs/outputs | |
| 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 |

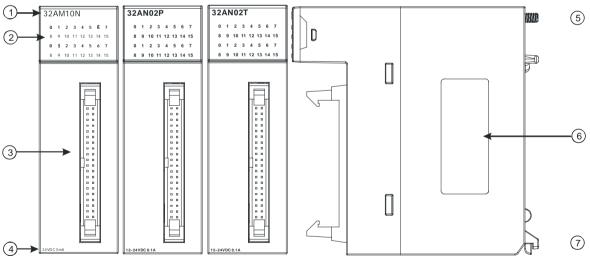




• AH32AM10N-5B/AH32AN02T-5B/AH32AN02P-5B

| 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



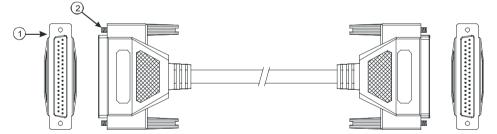
| Number | Name | Description |
|--------|-----------------------------------|--|
| 1 | Model name | Model name of the module |
| 2 | Input/Output LED indicator | If there is an input signal, the input LED indicator is ON. If there is an output signal, the output LED indicator is ON. |
| 3 | Latch connector | 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 1 64AM10N 64AN02T 64AN02P **6**07 ← -18 \bigtriangleup 234 234 2 3 4 D 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 8 9 10 11 12 13 14 15 9 10 11 12 13 14 15 1 2 3 4 5 6 7 9 10 11 12 13 14 15 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 2 6 EXTENSION PORT Г **→**0-3 () 3 (4) 0 - 3 0-3 F J. 9 . . (7) (4)◀ 厅 b (10) T 5 Ĭ

| Number | Name | Description | |
|--------|----------------------|---|--|
| 1 | Model name | Model name of the module | |
| 2 | Input/Output LED | If there is an input signal, the input LED indicator is ON. | |
| 2 | indicator | If there is an output signal, the output LED indicator is ON. | |
| 3 | LED indicator | Left: High 32 bits | |
| 3 | switch | Right: Low 32 bits | |
| 4 | 4 Latch connector | It is connected to the I/O extension cable | |
| 4 | Laten connector | UC-ET010-24A/UC-ET010-24C. | |
| 5 | _ Description of the | Number of insute/outputs and encodingtions | |
| 5 | 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 | |

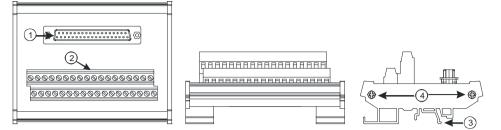
- DB37 connector, I/O extension cable, and external terminal module
 - 1. I/O extension cable UC-ET010-33B



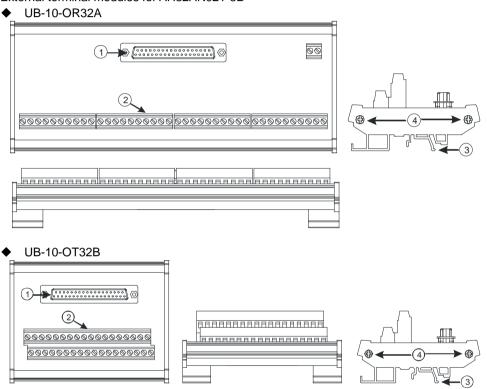
| Number | Name | Description |
|--------|----------------|---|
| 1 | DB37 connector | Connecting a digital input/output module and an external terminal module. |
| 2 | Set screw | Fixing the connector |



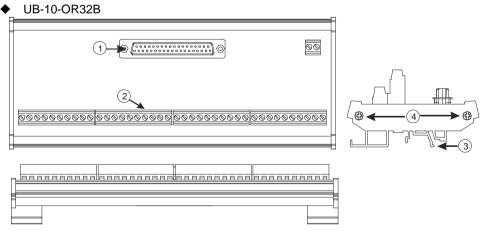
2. External terminal module for AH32AM10N-5B: UB-10-ID32B



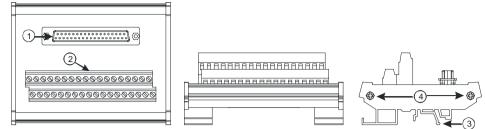
3. External terminal modules for AH32AN02T-5B



4. External terminal modules for AH32AN02P-5B



♦ UB-10-OT32B

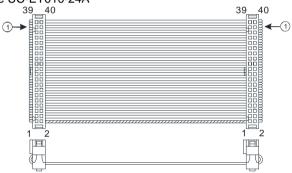




| Number | Name | Description |
|--------|----------------|---|
| 1 | DB37 connector | Connecting the external terminal module and a digital |
| 1 | DD37 COnnector | input/output module |
| 2 | Terminals | Input/Output terminals for wiring |
| 3 | Clip | Hanging the external terminal module on a DIN rail |
| 4 | Set screw | Fixing the base |

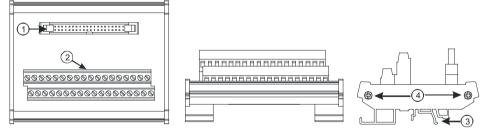
• Latch connector, I/O extension cable, and external terminal module

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



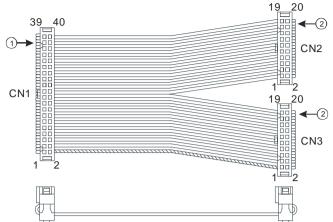
| Number | Name | Description |
|--------|------------------------|---|
| 1 | 1 40-pin IDC connector | Connecting a digital input/output module and the external |
| 1 | | terminal module UB-10-ID32A |

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



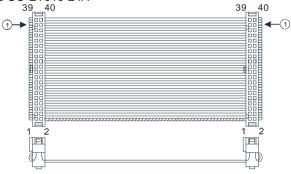
| Number | Name | Description |
|--------|------------------------|---|
| 1 | 10 nin latch connector | Connecting the external terminal module and a digital |
| 1 | 40-pin latch connector | input/output module |
| 2 | Terminals | Input/Output terminals for wiring |
| 3 | Clip 🗆 | Hanging the external terminal module on a DIN rail |
| 4 | Set screw | Fixing the base |

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



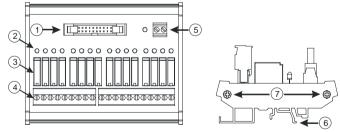
| Number | Name | Description |
|--------|----------------------|--|
| 1 | 40-pin IDC connector | Connecting a digital input/output module and an external terminal module. |
| 2 | 20-pin IDC connector | Connecting a digital input/output module and the external terminal module UB-10-OR16A or UB-10-OR16B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

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



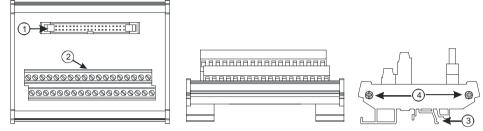
| Number | Name | Description | |
|--------|----------------------|---|--|
| 1 | 40-pin IDC connector | Connecting a digital input/output module and the external terminal module UB-10-OT32A | |

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



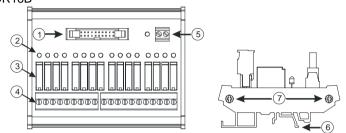
2

◆ UB-10-OT32A

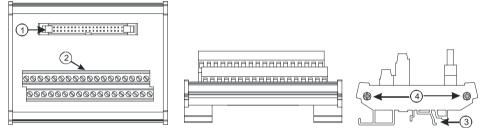




- 6. External terminal module for AH32AN02P-5C/AH64AN02P-5C
 - UB-10-OR16B



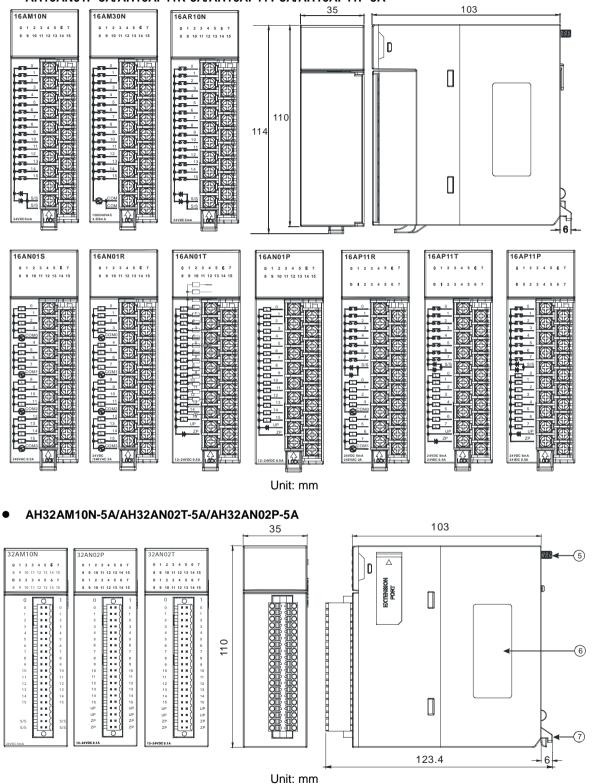
UB-10-OT32A

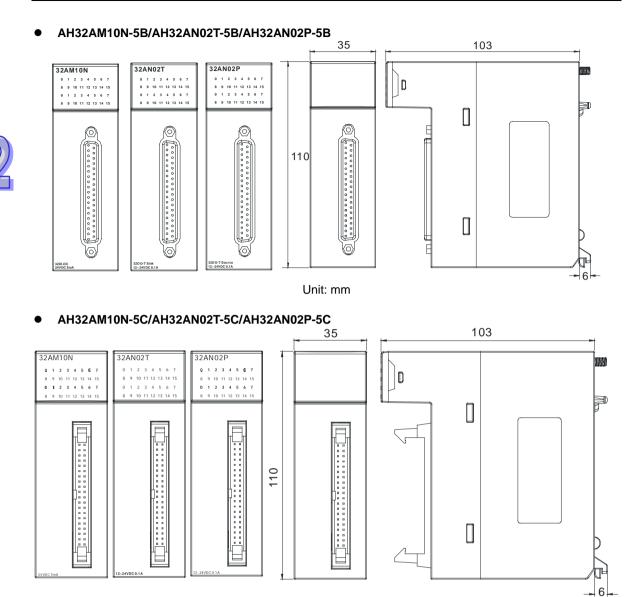


| Number | Name | Description | |
|--------|-----------------|--|--|
| 1 | 20-pin latch | Connecting the external terminal module and a digital input/output | |
| 1 | connector | module | |
| 2 | Output LED | If there is an output signal, the output LED indicator is ON. | |
| 2 | indicator | | |
| 3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

2.4.3 Dimensions

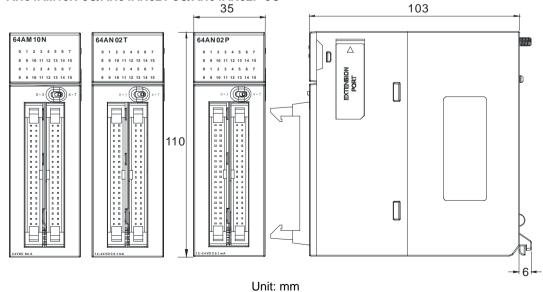
• AH16AM10N-5A/AH16AM30N-5A/AH16AR10N-5A/AH16AN01S-5A/AH16AN01R-5A/AH16AN01T-5A/ AH16AN01P-5A/AH16AP11R-5A/AH16AP11T-5A/AH16AP11P-5A



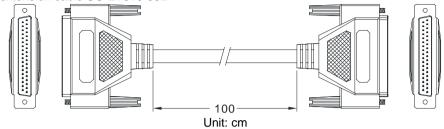




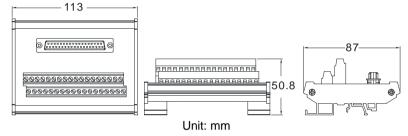
• AH64AM10N-5C/AH64AN02T-5C/AH64AN02P-5C



- DB37 connector, I/O extension cable, and external terminal module
 - 1. I/O extension cable UC-ET010-33B

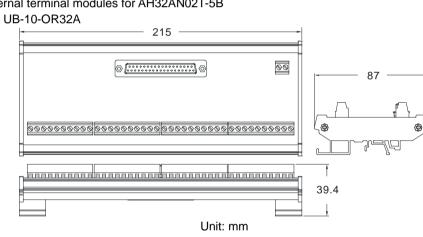


2. External terminal module for AH32AM10N-5B: UB-10-ID32B



3. External terminal modules for AH32AN02T-5B

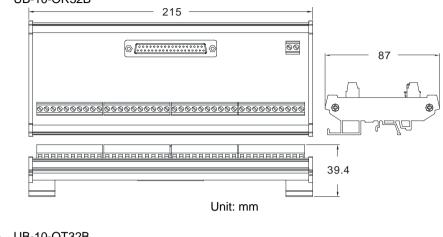
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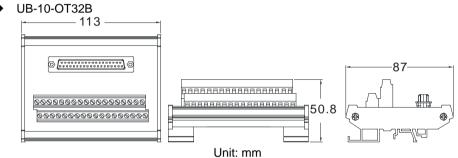


UB-10-OT32B

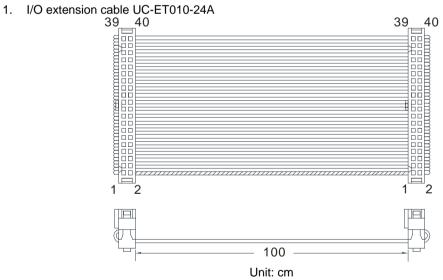


- 4. External terminal modules for AH32AN02P-5B
 - ♦ UB-10-OR32B

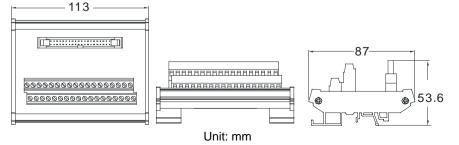




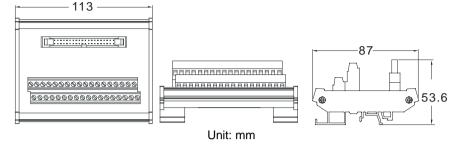
• Latch connector, I/O extension cable, and external terminal module



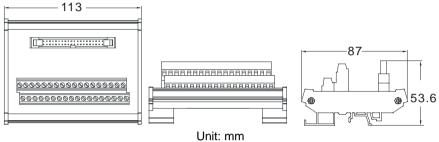
2. External terminal module for AH32AM10N-5C/AH64AM10N-5C: UB-10-ID32A



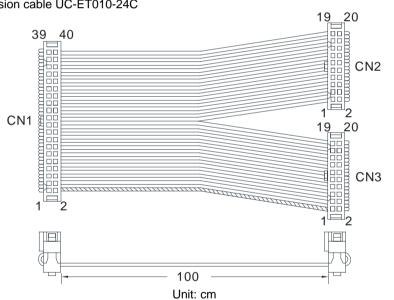
3. External terminal module for AH32AN02T-5C/AH64AN02T-5C: UB-10-OT32A



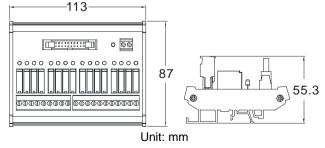
4. External terminal module for AH32AN02P-5C/AH64AN02P-5C: UB-10-OT32A



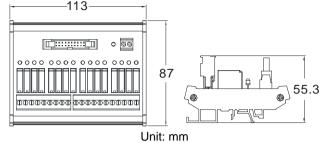
5. I/O extension cable UC-ET010-24C



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



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





2.4.4 Arrangement of Input/Output Terminals

| AH16AM10N-5A | AH16AM30N-5A | AH16AR10N-5A | AH16AN01S-5A |
|-----------------------|-------------------------|-----------------------|-----------------------|
| 16AM10N | 16AM30N | 16AR10N | 16AN01S |
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |
| 8 9 10 11 12 13 14 15 | 8 9 10 11 12 13 14 15 | 8 9 10 11 12 13 14 15 | 8 9 10 11 12 13 14 15 |
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| | сом | | |
| | | S/S SIZ | |
| | 120/240 VA C 4.5/9mA | 24VDC5mA | |
| | | | |

| AH16AN01R-5A | AH16AN01T-5A | AH16AN01P-5A |
|---|---|---|
| 16AN01R | 16AN01T | 16AN01P |
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 6 7 |
| 8 9 10 11 12 13 14 15 | 8 9 10 11 12 13 14 15 | 8 9 10 11 12 13 14 15 |
| | | |
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| | | |
| | | |
| | | |
| | | |
| | 12-24VDC 0.5A | 12-24VDC 0.5A |
| | | |
| | | |
| AH16AP11R-5A | AH16AP11T-5A | AH16AP11P-5A |
| AH16AP11R-5A | AH16AP11T-5A | AH16AP11P-5A |
| () | r | · · · · · · · · · · · · · · · · · · · |
| 16AP11R | 16AP11T | 16AP11P |
| 16AP11R 0 1 2 3 4 5 6 7 | 16AP11T 0 1 2 3 4 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 |
| 16AP11R 0 1 2 3 4 5 6 7 | 16AP11T 0 1 2 3 4 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 |
| 16AP11R 0 1 2 3 4 5 6 7 | 16AP11T 0 1 2 3 4 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 |
| 16AP11R 0 1 2 3 4 5 6 7 | 16AP11T 0 1 2 3 4 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 |
| 16AP11R 0 1 2 3 4 5 6 7 | 16AP11T 0 1 2 3 4 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 |
| 16AP11R 0 1 2 3 4 5 6 7 | 16AP11T 0 1 2 3 4 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 16AP11T 0 1 2 3 4 5 6 7 | $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 0 1 5/5 7 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 6 7 6 7 7 0 1 2 3 4 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 5 2 5 3 5 3 5 3 5 3 5 3 5 3 5 3 5 3 5 3 5 3 5 3 5 3 5 3 5 3 6 3 1 2 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 7 3 7 6 7 0 7 3 5 5 6 7 | 16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 1 2 3 4 5 6 7 1 1 2 3 4 5 6 7 1 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 0 5 5 6 6 7 7 7 7 0 1 2 3 7 6 7 7 7 0 1 2 3 7 6 7 7 7 7 1 5 5 7 | 16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 0 1 5 5 6 7 6 7 0 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 |
| 16AP11R 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 1 1 1 1 1 1 1 0 1 1 1 1 1 | 16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 7 7 7 0 1 2 3 6 7 7 7 7 7 0 1 2 3 6 7 <td>16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 5 5 6 5 6 7 7 7</td> | 16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 5 5 6 5 6 7 7 7 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | 16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 1 2 3 6 7 6 7 7 7 1 2 3 6 7 | 16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 1 3 5 6 7 7 7 7 7 1 3 6 7 7 7 7 7 7 1 2 7 7 7 7 7 7 7 7 1 2 7 |
| 16AP11R 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 5 5 5 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 2 3 6 7 6 7 0 1 1 1 1 1 1 1 1 1 2 3 6 7 6 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <t< td=""><td>16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 5 6 1 5 1 5 1 5 1 5 1 1 1 1 1 1 1 1</td><td>16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 7 1 5 6 7 6 7 7 6 7</td></t<> | 16AP11T 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 5 6 1 5 1 5 1 5 1 5 1 1 1 1 1 1 1 1 | 16AP11P 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 6 7 6 7 7 1 5 6 7 6 7 7 6 7 |



| AH32AM10N-5A | | | AH32AN02T-5A | | |
|--|---|--|--|---|--|
| nn | 0.0 | 1.0 | рр | 0.0 | 1.0 |
| 32AM10N | 0.0 | 1.1 | 32AN02T | 0.0 | 1.1 |
| 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.2 | 1.2 | 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.2 | 1.2 |
| 0 1 2 3 4 5 6 7 | 0.3 | 1.3 | 0 1 2 3 4 5 6 7 | 0.3 | 1.3 |
| 8 9 10 11 12 13 14 15 | 0.0 | 1.4 | 8 9 10 11 12 13 14 15 | 0.4 | 1.4 |
| 0 0 1 | 0.5 | 1.5 | 0 1 | 0.5 | 1.5 |
| | 0.6 | 1.6 | | 0.6 | 1.6 |
| | 0.7 | 1.7 | | 0.7 | 1.7 |
| 3 = = = { 3 4 = = = 4 | 0.8 | 1.8 | 3 нн (3 4 нн 4 | 0.8 | 1.8 |
| 5 = = = 2 5 | 0.9 | 1.9 | 5 = = = 2 5 | 0.9 | 1.9 |
| | 0.10 | 1.10 | | 0.10 | 1.10 |
| 8 = = = 8 | 0.11 | 1.11 | 8 = = = = 8 9 = = = = 9 | 0.11 | 1.11 |
| | 0.12 | 1.12 | | 0.12 | 1.12 |
| | 0.13 | 1.13 | | 0.13 | 1.13 |
| | 0.14 | 1.14 | 13 🗆 🗷 🛤 🎽 13 | 0.14 | 1.14 |
| | 0.15 | 1.15 | 14 = # # [14 15 = # # [15 | 0.15 | 1.15 |
| | - | - | | UP | UP |
| S/S = = = { S/S | - | - | ZP = = = (ZP | UP | UP |
| S/S | S/S | S/S | | ZP | ZP |
| 24VDC 5mA | S/S | S/S | 12-24VDC 0.1A | ZP | ZP |
| | | | | 1 | |
| | | | | | |
| AH32AN0 | 2P-5A | | AH32AM ² | 10N-5B | 1 |
| AH32AN02 | 2 P-5A 0.0 | 1.0 | AH32AM1 32AM10N | 10N-5B 0.0 | 0.1 |
| f | T | 1.0 1.1 | R | 1 | 0.1 0.3 |
| 32AN02P | 0.0 | - | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 | - |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 | 1.1 | 32AM10N 0 1 2 3 4 5 6 7 | 0.0 | 0.3 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.1 0.2 | 1.1 1.2 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 | 0.3 0.5 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 1 12 13 14 15 0 1 1 12 13 14 15 0 1 1 1 12 13 14 15 | 0.0 0.1 0.2 0.3 | 1.1 1.2 1.3 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 | 0.3 0.5 0.7 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 15 0 1 11 12 13 14 15 | 0.0 0.1 0.2 0.3 0.4 | 1.1 1.2 1.3 1.4 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 | 0.3 0.5 0.7 0.9 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 11 12 13 14 15 0 0 10 11 12 13 14 15 0 0 10 11 12 13 14 15 | 0.0 0.1 0.2 0.3 0.4 0.5 | 1.1 1.2 1.3 1.4 1.5 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 1 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 12 13 14 15 0 1 12 13 14 15 1 2 1 2 3 4 1 2 3 4 1 1 2 3 4 4 | 0.0 0.1 0.2 0.3 0.4 0.5 0.6 | 1.1 1.2 1.3 1.4 1.5 1.6 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 1 2 13 14 15 0 1 1 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 | 0.3 0.5 0.7 0.9 0.11 0.13 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 O Image: Colspan="2">Image: Colspan="2">Image: Colspan="2">O 0 Image: Colspan="2">Image: Colspan="2">O 1 Image: Colspan="2">Image: Colspan="2" 0 Image: Colspan="2">Image: Colspan="2" Image: Colspan="2">Image: Colspan="2" Image: Colspan="2" Image: Colspan="2" Image: Colspan="2" </th <th>0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7</th> <th>1.1 1.2 1.3 1.4 1.5 1.6 1.7</th> <th>32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</th> <th>0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14</th> <th>0.3 0.5 0.7 0.9 0.11 0.13 0.15</th> | 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 | 1.1 1.2 1.3 1.4 1.5 1.6 1.7 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 O 1 0 11 12 13 14 15 O 1 1 2 14 1 2 3 11 2 3 4 14 5 5 6 7 14 5 6 7 | 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 | 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 11 12 13 14 15 0 11 12 13 14 15 3 4 14 2 3 4 4 5 14 4 5 6 7 14 4 5 6 7 14 7 8 9 14 9 | 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 | 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 O 1 0 1 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 15 0 1 11 12 13 14 15 1 1 12 14 1 12 3 11 11 12 13 14 5 11 11 12 13 14 5 11 13 14 15 14 5 13 14 15 14 15 1 14 15 15 15 16 | 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 0.10 | 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 1.10 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 1 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC 1.1 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 1.2 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 0 1 12 13 14 15 0 1 1 2 3 14 15 0 1 1 2 3 14 1 2 3 11 2 3 3 4 14 5 14 4 5 6 14 14 5 10 11 10 11 12 14 12 | 0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 0.10 0.11 | 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 1.10 1.11 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC 1.1 1.3 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 1.2 1.4 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 O 1 0 11 12 13 14 15 O 11 12 14 15 6 11 14 5 6 7 8 14 5 6 7 8 14 7 8 9 10 11 10 11 | 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 | 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 1.10 1.11 1.12 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC 1.1 1.3 1.5 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 1.2 1.4 1.6 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 2 3 11 2 3 4 3 4 11 2 3 4 4 11 5 6 11 12 3 4 11 5 6 14 15 0 11 11 11 11 12 13 13 14 15 14 14 15 14 14 | 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 | 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 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC 1.1 1.3 1.5 1.7 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 1.2 1.4 1.6 1.8 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 0 1 12 13 14 15 0 1 1 2 3 14 15 0 1 12 13 14 15 1 2 3 14 15 10 1 1 10 11 12 13 14 12 13 14 15 12 13 14 15 10 11 12 13 14 15 10 11 15 13 14 15 15 10 15 10 15 14 15 14 15 | 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 | 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 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC 1.1 1.3 1.5 1.7 1.9 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 1.2 1.4 1.6 1.8 1.10 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 1 2 3 11 2 3 4 11 2 3 14 4 5 1 11 11 11 2 3 11 4 5 6 11 11 11 12 14 15 10 11 11 12 13 14 12 13 14 15 14 15 15 | 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 | 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 | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC 1.1 1.3 1.5 1.7 1.9 1.11 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 1.2 1.4 1.6 1.8 1.10 1.12 |
| 32AN02P 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 1 2 3 4 5 7 3 4 4 5 6 6 7 8 4 4 5 6 7 4 4 5 6 7 4 4 10 11 12 4 10 11 12 4 4 12 13 14 15 11 12 13 14 15 14 15 14 15 19 19 10 11 | 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 UP | 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 UP | 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 12 13 14 15 0 1 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S NC 1.1 1.3 1.5 1.7 1.9 1.11 1.13 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.0 1.2 1.4 1.6 1.8 1.10 1.12 1.14 |



| AH32AN | 02T-5B | | AH32AN | 02P-5B | |
|--|---|--|--|--|---|
| 32AN02T | 0.0 | 0.1 | 32AN02P | 0.0 | 0.1 |
| 0 1 2 3 4 5 6 7 | 0.2 | 0.3 | 0 1 2 3 4 5 6 7 | 0.2 | 0.3 |
| 8 9 10 11 12 13 14 15 | 0.4 | 0.5 | 8 9 10 11 12 13 14 15 | 0.4 | 0.5 |
| 0 1 2 3 4 5 6 7 | 0.6 | 0.7 | 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.6 | 0.7 |
| 8 9 10 11 12 13 14 15 | 0.8 | 0.9 | 8 9 10 11 12 13 14 15 | 0.8 | 0.9 |
| | 0.10 | 0.11 | | 0.10 | 0.11 |
| | 0.12 | 0.13 | | 0.12 | 0.13 |
| | 0.14 | 0.15 | (Feither | 0.14 | 0.15 |
| | ZP | ZP | | ZP | UP |
| 8 ° | UP | 1.0 | | UP | 1.0 |
| | 1.1 | 1.2 | | 1.1 | 1.2 |
| | 1.3 | 1.4 | | 1.3 | 1.4 |
| | 1.5 | 1.6 | | 1.5 | 1.6 |
| | 1.7 | 1.8 | | 1.7 | 1.8 |
| 000 | 1.9 | 1.10 | | 1.9 | 1.10 |
| | 1.11 | 1.12 | | 1.11 | 1.12 |
| | 1.13 | 1.14 | | 1.13 | 1.14 |
| | 1.15 | ZP | | 1.15 | ZP |
| | UP | | | UP | |
| 12~24VDC 0.1A | | | 12~24VDC 0.1A | | |
| | | | | | |
| | | | | | |
| AH32AM1 | | 2.4 | AH32AN | | 2.1 |
| AH32AM1 32AM10N | 0.0 | 0.1 | AH32AN 32AN02T | 0.0 | 0.1 |
| 32AM10N 0 1 2 3 4 5 6 7 | 0.0 | 0.3 | 32AN02T 0 1 2 3 4 5 6 7 | 0.0 | 0.3 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 | 0.3 0.5 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 | 0.3 0.5 |
| 32AM10N 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 | 0.3 0.5 0.7 | 32AN02T 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 | 0.3 0.5 0.7 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 | 0.3 0.5 0.7 0.9 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 | 0.3 0.5 0.7 0.9 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 0.10 | 0.3 0.5 0.7 0.9 0.11 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 0.10 | 0.3 0.5 0.7 0.9 0.11 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 | 0.3 0.5 0.7 0.9 0.11 0.13 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 | 0.3 0.5 0.7 0.9 0.11 0.13 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 | 0.3 0.5 0.7 0.9 0.11 0.13 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 1 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 1.4 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 1.5 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 1.4 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 1.5 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 1.4 1.6 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 1.5 1.7 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 1.4 1.6 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 1.5 1.7 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 1.4 1.6 1.8 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 1.5 1.7 1.9 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 1.4 1.6 1.8 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 1.5 1.7 1.9 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 1.4 1.6 1.8 1.10 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 1.5 1.7 1.9 1.11 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 1.4 1.6 1.8 1.10 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 1.5 1.7 1.9 1.11 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 1 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 1.4 1.6 1.8 1.10 1.12 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 1.5 1.7 1.9 1.11 1.13 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 1.4 1.6 1.8 1.10 1.12 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 1.5 1.7 1.9 1.11 1.13 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 1.4 1.6 1.8 1.10 1.12 1.14 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 1.5 1.7 1.9 1.11 1.13 1.15 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 1.4 1.6 1.8 1.10 1.12 1.14 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 1.5 1.7 1.9 1.11 1.13 1.15 |
| 32AM10N 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 S/S 1.0 1.2 1.4 1.6 1.8 1.10 1.12 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 S/S 1.1 1.3 1.5 1.7 1.9 1.11 1.13 | 32AN02T 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 0.0 0.2 0.4 0.6 0.8 0.10 0.12 0.14 ZP UP 1.0 1.2 1.4 1.6 1.8 1.10 1.12 | 0.3 0.5 0.7 0.9 0.11 0.13 0.15 ZP UP 1.1 1.3 1.5 1.7 1.9 1.11 1.13 |

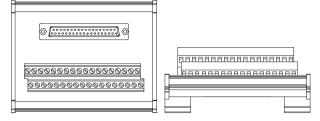


| AH32 | AN02P- | 5C | | | AH | 64A | M10N- | -5C | | |
|-----------------------|--|--|---|---|---|---|--|--|---|---|
| 32AN02P | | 0.0 | 0 |).1 | 64AM10N | 1 | NC | NC | NC | NC |
| | | 0.2 | (|).3 | 0 1 2 3 4 5 6 7 | | S/S | S/S | 2.0 | 2.1 |
| 8 9 10 11 12 13 14 15 | | 0.4 | (|).5 | 8 9 10 11 12 13 14 15 | Í | 1.15 | 1.14 | 2.2 | 2.3 |
| 0 1 2 3 4 5 6 7 | | 0.6 | (|).7 | 0 1 2 3 4 5 6 7 | | 1.13 | 1.12 | 2.4 | 2.5 |
| 8 9 10 11 12 13 14 15 | | 0.8 | 0 |).9 | 8 9 10 11 12 13 14 15 | | 1.11 | 1.10 | 2.6 | 2.7 |
| | | 0.10 | 0 | .11 | 0-3 4-7 | | 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 | Z | ZP | | | 1.3 | 1.2 | 2.14 | 2.15 |
| | | UP | ι | JP | | | 1.1 | 1.0 | S/S | S/S |
| | | 1.0 | 1 | 1.1 | | | NC | NC | NC | NC |
| | | 1.2 | 1 | 1.3 | | | S/S | S/S | 3.0 | 3.1 |
| | | 1.4 | 1 | l.5 | | | 0.15 | 0.14 | 3.2 | 3.3 |
| | | 1.6 | 1 | 1.7 | | | 0.13 | 0.12 | 3.4 | 3.5 |
| | | 1.8 | 1 | 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 | 2 | ZP | | | 0.3 | 0.2 | 3.14 | 3.15 |
| 12~24VDC 0.1A | | UP | ι | JP | 2 4V DC 5m A | ļ | 0.1 | 0.0 | S/S | S/S |
| ΔH64 | AN02T- | 50 | | | ΔΗ | 644 | N02P- | 50 | | |
| 64AN 02T | UP | UP | 2.0 | 2.1 | 64AN 02P | 1 | UP | UP | 2.0 | 2.1 |
| 0 1 2 3 4 5 6 7 | ZP | ZP | 2.2 | 2.3 | 0 1 2 3 4 5 6 7 | | ZP | ZP | 2.2 | 2.3 |
| 8 9 10 11 12 13 14 15 | 1.15 | 1.14 | 2.4 | 2.5 | 8 9 10 11 12 13 14 15 | | 1.15 | 1.14 | 2.4 | 2.5 |
| 0 1 2 3 4 5 6 7 | 1.13 | 1.12 | 2.6 | 2.7 | 0 1 2 3 4 5 6 7 | | 1.13 | 1.12 | 2.6 | 2.7 |
| 8 9 10 11 12 13 14 15 | 1.11 | 4 4 0 | | | | | | | | |
| | | 1.10 | 2.8 | 2.9 | 8 9 10 11 12 13 14 15 | | 1.11 | 1.10 | 2.8 | 2.9 |
| 0 - 3 (4 - 7 | 1.9 | 1.10 | 2.8 2.10 | 2.9 2.11 | 8 9 10 11 12 13 14 15 0 - 3 (4 - 7 | | 1.11 1.9 | 1.10 1.8 | 2.8 2.10 | 2.9 2.11 |
| 0 - 3 | | | - | - | | 2 | | - | - | - |
| 0-3 | 1.9 | 1.8 | 2.10 | 2.11 | | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 1.9 | 1.8 | 2.10 | 2.11 |
| | 1.9 1.7 | 1.8 1.6 | 2.10 2.12 | 2.11 2.13 | | | 1.9 1.7 | 1.8 1.6 | 2.10 2.12 | 2.11 2.13 |
| | 1.9 1.7 1.5 | 1.8 1.6 1.4 | 2.10 2.12 2.14 | 2.11 2.13 2.15 | | | 1.9 1.7 1.5 | 1.8 1.6 1.4 | 2.10 2.12 2.14 | 2.11 2.13 2.15 |
| | 1.9 1.7 1.5 1.3 | 1.8 1.6 1.4 1.2 | 2.10 2.12 2.14 ZP | 2.11 2.13 2.15 ZP | | | 1.9 1.7 1.5 1.3 | 1.8 1.6 1.4 1.2 | 2.10 2.12 2.14 ZP | 2.11 2.13 2.15 ZP |
| | 1.9 1.7 1.5 1.3 1.1 | 1.8 1.6 1.4 1.2 1.0 | 2.10 2.12 2.14 ZP UP | 2.11 2.13 2.15 ZP UP | | | 1.9 1.7 1.5 1.3 1.1 | 1.8 1.6 1.4 1.2 1.0 | 2.10 2.12 2.14 ZP UP | 2.11 2.13 2.15 ZP UP |
| | 1.9 1.7 1.5 1.3 1.1 UP | 1.8 1.6 1.4 1.2 1.0 UP | 2.10 2.12 2.14 ZP UP 3.0 | 2.11 2.13 2.15 ZP UP 3.1 | | | 1.9 1.7 1.5 1.3 1.1 UP | 1.8 1.6 1.4 1.2 1.0 UP | 2.10 2.12 2.14 ZP UP 3.0 | 2.11 2.13 2.15 ZP UP 3.1 |
| | 1.9 1.7 1.5 1.3 1.1 UP ZP | 1.8 1.6 1.4 1.2 1.0 UP ZP | 2.10 2.12 2.14 ZP UP 3.0 3.2 | 2.11 2.13 2.15 ZP UP 3.1 3.3 | | | 1.9 1.7 1.5 1.3 1.1 UP ZP | 1.8 1.6 1.4 1.2 1.0 UP ZP | 2.10 2.12 2.14 ZP UP 3.0 3.2 | 2.11 2.13 2.15 ZP UP 3.1 3.3 |
| | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 | | | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 |
| | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 3.10 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 3.11 | | | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 |
| | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 0.11 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 0.10 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 | | | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 0.11 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 0.10 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 |
| | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 0.11 0.9 0.7 0.5 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 0.10 0.8 0.6 0.4 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 3.10 3.12 3.14 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 3.11 3.13 3.15 | | | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 0.11 0.9 0.7 0.5 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 0.10 0.8 0.6 0.4 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 3.10 3.12 3.14 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 3.11 3.13 3.15 |
| | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 0.11 0.9 0.7 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 0.10 0.8 0.6 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 3.10 3.12 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 3.11 3.13 | | | 1.9 1.7 1.5 1.3 1.1 UP ZP 0.15 0.13 0.11 0.9 0.7 | 1.8 1.6 1.4 1.2 1.0 UP ZP 0.14 0.12 0.10 0.8 0.6 | 2.10 2.12 2.14 ZP UP 3.0 3.2 3.4 3.6 3.8 3.10 3.12 | 2.11 2.13 2.15 ZP UP 3.1 3.3 3.5 3.7 3.9 3.11 3.13 |



• DB37 connector and the external terminal module

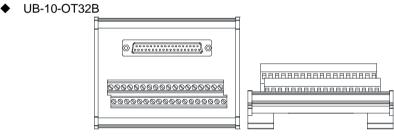
1. External terminal module for AH32AM10N-5B: UB-10-ID32B



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 |

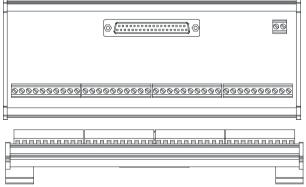
2. External terminal modules for AH32AN02T-5B



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

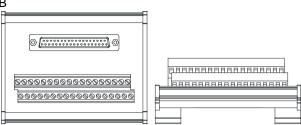


AH series terminals: (only applicable for AH series)

| | | | | | | | | | | | | | | | | | | | GND | +24V |
|-----------------------|----|------|------|------|------|----|------|------|------|-------|----|------|------|-------|-------|----|-------|-------|-------|-------|
| 1 st from | 00 | | | | | ~ | | | | V0 7 | 00 | | | | | 00 | | V0.40 | | 10.45 |
| the left | CO | Y0.0 | Y0.1 | Y0.2 | Y0.3 | C1 | Y0.4 | Y0.5 | Y0.6 | YU.7 | C2 | Y0.8 | Y0.9 | Y0.10 | Y0.11 | 03 | Y0.12 | YU.13 | Y0.14 | Y0.15 |
| 21 st from | 04 | V4 0 | | V4 0 | V4 0 | 05 | | | ¥4.0 | V/4 7 | 00 | V4 0 | X4 0 | V4.40 | | 07 | V4.40 | V4.40 | | V4.45 |
| the left | C4 | ¥1.0 | ¥1.1 | 11.2 | 11.3 | 65 | ¥1.4 | ¥1.5 | ¥1.6 | ¥1.7 | 60 | 11.8 | ¥1.9 | ¥1.10 | ¥1.11 | 07 | 11.12 | 11.13 | ¥1.14 | Y1.15 |



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

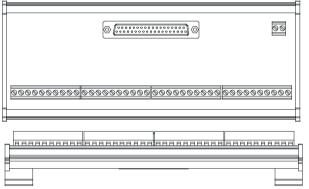




AH series terminals: (only applicable for AH series)

| 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 |
|-----------------------|---------|------|------|------|------|----|------|------|------|------|----|------|------|-------|-------|----|-------|-------|--------|-------|
| 1 st from | <u></u> | VOO | V0 4 | VO O | VOD | 01 | V0 4 | | VOC | V0 7 | 00 | V0 0 | V0 0 | V0 40 | VO 44 | 00 | VO 40 | V0 40 | V0 4 4 | V0 45 |
| the left | C0 | 10.0 | 10.1 | 10.2 | Y0.3 | CI | 10.4 | 10.5 | 10.6 | 10.7 | 62 | 10.8 | 10.9 | 10.10 | 10.11 | 63 | 10.12 | 10.13 | 10.14 | Y0.15 |
| 21 st from | ~ | V4 0 | | V4 0 | V4 0 | 05 | | | V4 0 | V4 7 | 00 | V4 0 | V4 0 | V4 40 | | 07 | V4.40 | V4 40 | | V4.45 |
| the left | C4 | 11.0 | ¥1.1 | 11.2 | 11.3 | 05 | Y1.4 | 11.5 | 11.6 | ¥1.7 | C6 | 11.8 | 11.9 | 11.10 | ¥1.11 | 07 | 11.12 | ¥1.13 | ¥1.14 | Y1.15 |

• Latch connector and external terminal module

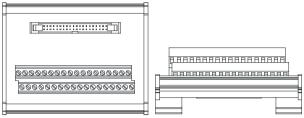
1. External terminal module for AH32AM10N-5C/AH64AM10N-5C: UB-10-ID32A

| <u>0000000000000000000000000000000000000</u> | |
|--|--|

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 |

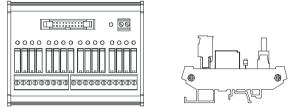
- 2. External terminal modules for AH32AN02T-5C/AH64AN02T-5C:
 - UB-10-OT32A



AH series terminals: (only applicable for AH series)

| Upper | 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 | |
|-------|------|------|------|------|------|-------|-------|-------|------|-------|------|------|------|-------|-------|-------|------|------|--|
| row | | | | | | | | | | | | | | | | | | | |
| Lower | 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 | |
| row | 10.1 | 10.0 | 10.0 | 10.7 | 10.0 | 10.11 | 10.10 | 10.10 | | 1.1.0 | 11.0 | | 11.0 | | | | 0.10 | | |

♦ UB-10-OR16A

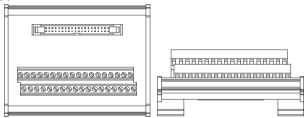


AH series terminals: (only applicable for AH series)

 GND
 +24V

 C0
 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

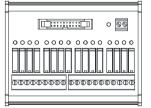
- 3. External terminal module for AH32AN02P-5C/AH64AN02P-5C:
 - UB-10-OT32A



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 | Voltage | Voltage | Voltago ipput | Current in put | | |
| conversion | input/Current input | input/Current input | Voltage input | Current input | | |
| Supply voltage | 24 V DC (20.4 V D | C~28.8 V DC) (-15% | ~+20%) | | | |
| Connector type | Removable termina | 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 | ±0.1% |
| currents which | |
| are averaged is | |
| 100.) | |
| Fiducial error | |
| (Full temperature | |
| range) (The | |
| number of input | ±0.2% |
| currents which | |
| are averaged is | |
| 100.) | |
| Linearity error | |
| (Room | |
| temperature) (Full | ±0.05% |
| temperature | |
| range) | .0.000/ |
| Linearity error | ±0.23% |
| Hardware | 16 bits |
| resolution | 252.0 |
| Input impedance | 250 Ω |
| Absolute input | ±32 mA |
| range | |

• 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 D | 24 V DC (20.4 V DC~28.8 V DC) (-15%~+20%) | | | | | |
| Connector type | Removable termina | 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 | ±10 V 0 V~10 V ±5 V 0 V~5 V 1 V~5 V | | | |
| Hardware output | -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 | ±0.04% |
| number of output | ±0.0478 |
| voltages which are | |
| averaged is 100.) | |
| Linearity error | |
| (Room | ±0.004% |
| temperature) | |
| Linearity error | |
| (Full temperature | ±0.004% |
| range) | |

| Hardware resolution | 16 bits |
|---------------------|-------------------------------|
| Permissible load | 1 kΩ~2 MΩ: ±10 V and 0 V~10 V |
| impedance | ≧500 Ω: 1 V~5 V |

| Analog-to-digital conversion | Curre | 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.) | ±C | ±0.06% | | | |
| Fiducial error (Full temperature range) (The number of output currents which are averaged is 100.) | ±C | ±0.07% | | | |
| Linearity error (Room temperature) | ±C | ±0.01% | | | |
| Linearity error (Full temperature range) | ±C | ±0.01% | | | |
| Hardware resolution | 1 | 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 | | | ±0.1% | | |
| averaged is 100.) | | | | | |
| Fiducial error (Full temperature range) (The number of input voltages which are | | ±0.45% | | | |
| averaged is 100.) 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 | ±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 | | | | | |



| 4 | 9 |
|---|---|
| / | 4 |

| Analog-to-digital conversion | Current input |
|------------------------------|---------------|
| Fiducial error | |
| (Room | |
| temperature) (The | ±0.1% |
| number of input | 10.170 |
| currents which are | |
| averaged is 100.) | |
| Fiducial error (Full | |
| temperature | |
| range) (The | ±0.2% |
| number of input | 10.270 |
| currents which are | |
| averaged is 100.) | |
| Linearity error | |
| (Room | ±0.05% |
| temperature) | |
| Linearity error | |
| (Full temperature | ±0.23% |
| range) | |
| Hardware | 16 bits |
| resolution | |
| Input impedance | 250 Ω |
| Absolute input | ±32 mA |
| range | |

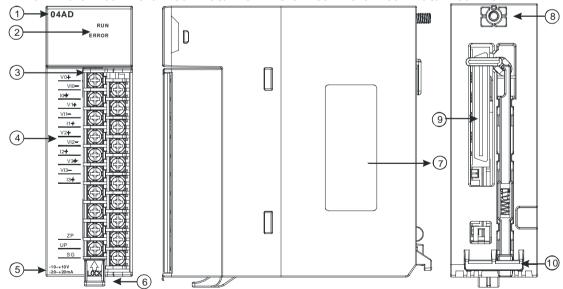
Functional specifications for the digital-to-analog conversion

| Digital-to-analog | | | | | | | | | |
|--------------------------|---|-----------------|----------------|----------------|---------------|--|--|--|--|
| conversion | | Voltage output | | | | | | | |
| Rated output | ±10 V 0 V~10 V ±5 V 0 V~5 V 1 V~5 V | | | | | | | | |
| range | | | | | | | | | |
| 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 | | | 0.000/ | | | | | | |
| number of output | | | ±0.02% | | | | | | |
| voltages which are | | | | | | | | | |
| averaged is 100.) | | | | | | | | | |
| Fiducial error (Full | | | | | | | | | |
| temperature | | | | | | | | | |
| range) (The | ±0.04% | | | | | | | | |
| number of output | ±0.0470 | | | | | | | | |
| voltages which are | | | | | | | | | |
| averaged is 100.) | | | | | | | | | |
| Linearity error | | | | | | | | | |
| (Room | ±0.004% | | | | | | | | |
| temperature) | | | | | | | | | |
| Linearity error | | | | | | | | | |
| (Full temperature | ±0.004% | | | | | | | | |
| range) | | | | | | | | | |
| Hardware | 16 bits | | | | | | | | |
| resolution | | | | | | | | | |
| Permissible load | 1 k Ω ~2 M Ω : ±10 V and 0 V~10 V | | | | | | | | |
| impedance | | ≧500 Ω: 1 V~5 V | | | | | | | |

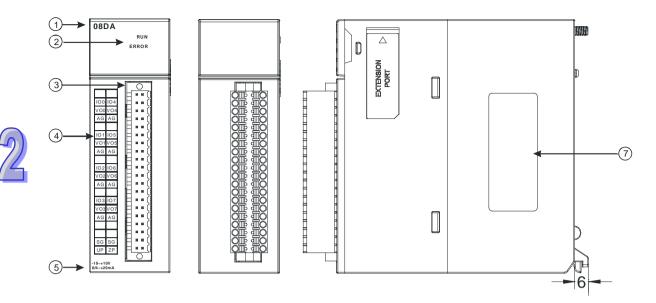
| Digital-to-analog conversion | Current output | | | | | | |
|--|-----------------|----------------|--|--|--|--|--|
| Rated output range | 0 mA~20 mA | 4 mA~20 mA | | | | | |
| Hardware output range | -0.2 mA~20.2 mA | 3.8 mA~20.2 mA | | | | | |
| Fiducial error (Room temperature) (The number of output currents which are | ±0.0 | ±0.06% | | | | | |
| averaged is 100.) Fiducial error (Full temperature range) (The number of output currents which are averaged is 100.) | ±0.0 | ±0.07% | | | | | |
| Linearity error (Room temperature) | ±0.0 | ±0.01% | | | | | |
| Linearity error (Full temperature range) | ±0.01% | | | | | | |
| Hardware resolution | 16 bits | | | | | | |
| Permissible load impedance | ≦5 | ≦550 Ω | | | | | |

2.5.2 Profiles

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



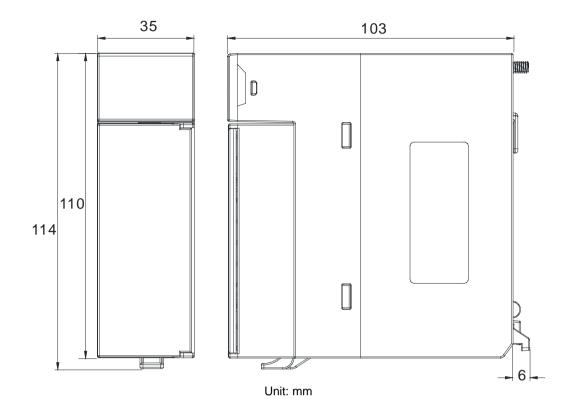
• AH08AD-5A/AH08DA-5A



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

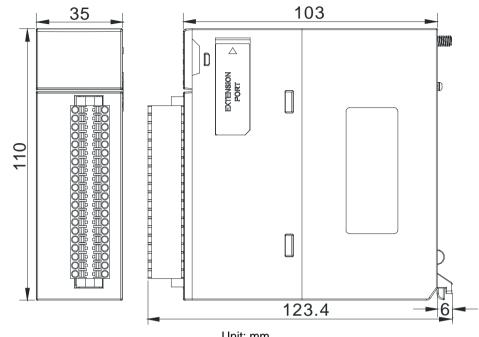
2.5.3 Dimensions

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





AH08AD-5A/AH08DA-5A



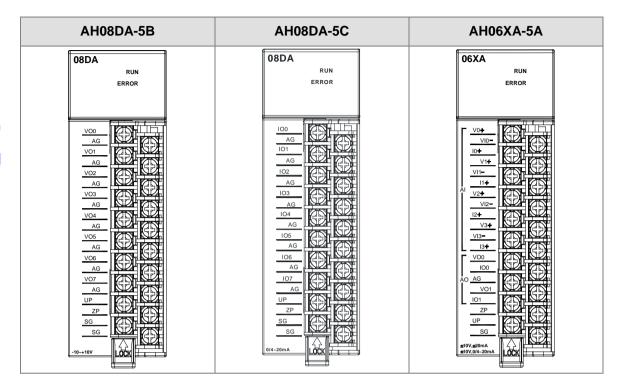




| AH04AD-5A | AH08AD-5A | AH08AD-5B | | |
|---|---|---|--|--|
| 04AD RUN ERROR | 08AD RUN ERROR | 08AD RUN ERROR | | |
| V0+ V0- V0+ V0+ < | I0+ I4+ I0+ I4+ V10+ V4+ IIII V10+ V1+ IIIII V1+ V1+ IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | V0+ V1+ V1- V2+ V2- V3+ V3+ V3+ V3+ V3+ V3+ V5+ V5+ V5+ V5+ V5- V5+ V5- V6- V7- SLD SLD 10- | | |
| | | | | |
| AH08AD-5C | AH04DA-5A | AH08DA-5A | | |
| AH08AD-5C | AH04DA-5A 04DA RUN ERROR | AH08DA-5A 08DA RUN ERROR | | |

2.5.4 Arrangement of Input/Output Terminals





2.5.5 Setting Parameters

(1) AH04AD-5A

| Parameter Setting | | | | |
|--|--|---|----|----------------------------|
| → AHOtAD-5A → CHO-CH3 Mode setting → CHO-CH3 Average Time → CHO-CH3 Calibration → Cha-CH3 Calibration → Cha-CH3 | AH04AD-5A MDS Information Normal Ex Module Name MDS Version MDS Build Date | change Area Area Area Area Area Area Area Are | | Import File Export File |
| Default | | | OK | Cancel |

(2) AH08AD-5A

| Par | ameter | Setti | ng | | | | | |
|-----|--------|-------|----|--|--|--|--|--|
| | | | | | | | | |
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(3) AH08AD-5B

| Parameter Setting | |
|---|---|
| AH0&AD-5B -CH0-CH7 Mode Setting -CH0-CH7 Average Time -CH0-CH7 Calibration -CH0-CH7 Calibration -Ch0-CH7 Calibration -Ch0-CH7 Calibration -Interrupt Eable Interrupt Eable Interrupt number -Warning LED -Conversion Flags(Read only) | AH08AD-5B MDS Information Normal Exchange Area Module Name AH08AD-5B MDS Version 100.00 MDS Build Date 2012/07/14 Import File Export File |
| Default | OK Cancel |

(4) AH08AD-5C

| CHO-CH7 Mode Setting CHO-CH7 Atteage Time CHO-CH7 Calibration MDS Information Normal Exchange Area CHO-CH7 Calibration Module Name AH08AD-5C Channel Alamn Interrupt Table MDS Version 100.00 Interrupt number MDS Build Date 2012/07/14 Import File | Parameter Setting | AH08AD-5C | | |
|--|--|--|----------------------|----------------------------|
| | CHO-CH7 Mode Setting CHO-CH7 Average Time CHO-CH7 Calibration CHO-CH7 Scale Range Channel Alarm Interrupt Enable Interrupt number Warming LED | MDS Information Normal E Module Name MDS Version | AH08AD-5C 1.00.00 | Import File Export File |

(5) AH04DA-5A

| Parameter Setting | | | | |
|---|--|---|----|----------------------------|
| AH04DA-5A -CH0-CH3 Chloration -CH0-CH3 Chloration -CH0-CH3 Chloration -CH0-CH3 Scale Range -OutPut Hold -Conversion Flags (Read only) | AH04DA-5A MDS Information Normal Ex Module Name MDS Version MDS Build Date | 2hange Area AH04DA-5A 1.00.00 2012/07/14 | | Import File Export File |
| Default | | | OK | Cancel |



(6) AH08DA-5A

| Paramet | er Setting | | | |
|---------|------------|--|--|--|
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(7) AH08DA-5B

| Parameter Setting | | | | |
|--|---|--|---|--------------------------------|
| Parameter Setting AH08DA-5B CH0-CH7 Mode setting - CH0-CH7 Scale Range - OutO-CH7 Scale Range - OutO-H7 Scale Range - OutPut Hold - Conversion Flags(Read only) | AH08DA-5B MDS Information Normal Exchang Module Name MDS Version MDS Build Date | e Area AH08DA-5B 1.00.00 2012/07/14 | • | |
| Default | | | N | Import File Export File Cancel |

(8) AH08DA-5C

| Parameter Setting | | | |
|--|---|----------------------|----------------------------|
| AHORDA-SC CHO-CH7 Mole setting CHO-CH7 Calibration CH0-CH7 Scale Range OutPut Hold Conversion Flags(Read only) | AH08DA-5C MDS Information Normal Exc Module Name MDS Version MDS Build Date | hange Area AH08DA-5C | Import File Export File |
| Default | | | OK Cancel |

(9) AH06XA-5A

| Parameter Setting | | | |
|--|---|---|----------------------------|
| AHO6XA-5A Channel Mode setting Channel Mode setting Channel Calibration Channel Calibration Channel Scale Pange OutPut Hold Channel Alam Interrupt Enable Interrupt Enable Marming LED Conversion Flags(Read only) | AH06XA-5A MDS Information Normal Exchant Module Name MDS Version MDS Build Date | ge Area AH06XA-SA 1.00.00 2012/07/14 | Import File Export File |
| Default | | | OK Cancel |

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

| Electrical specifications | |
|----------------------------|---|
| Number of analog inputs | 4 |
| | 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 |
| Applicable sensor | $0\sim300 \Omega$ 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 |
| | 25°C/77°F: The error is ±0.5% of the input within the range. |
| Overall accuracy | -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 |
| | 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 | 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 $\pm 1^{\circ}$ C of a Pt100/Pt1000/Ni100/Ni1000 sensor's temperature. The error is $\pm 0.1\%$ 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 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, ty ±150 mV voltage inputs | pe E, and type N thermocouples | |
| 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. | | |



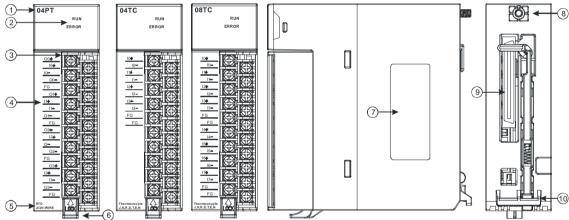
| Module name | AH04TC-5A | AH08TC-5A | | |
|-------------|---|------------------|--|--|
| | Isolation between a digital circuit and a | ground: 500 V DC | | |
| | Isolation between an analog circuit and a ground: 500 V DC | | | |
| | Isolation between an analog circuit and a digital circuit: 500 V DC | | | |
| | 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 S: -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

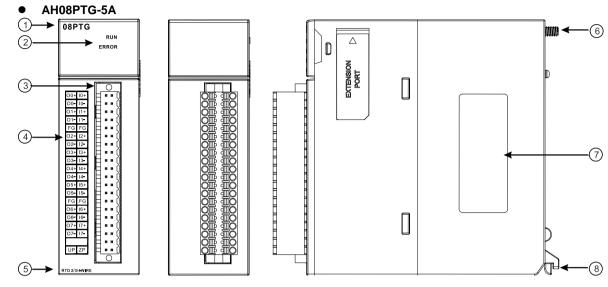
• AH04PT-5A/AH04TC-5A/AH08TC-5A



| Number | Name | Description | |
|--------|---|---|--|
| 1 | Model name | Model name of the module | |
| | 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/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 | |



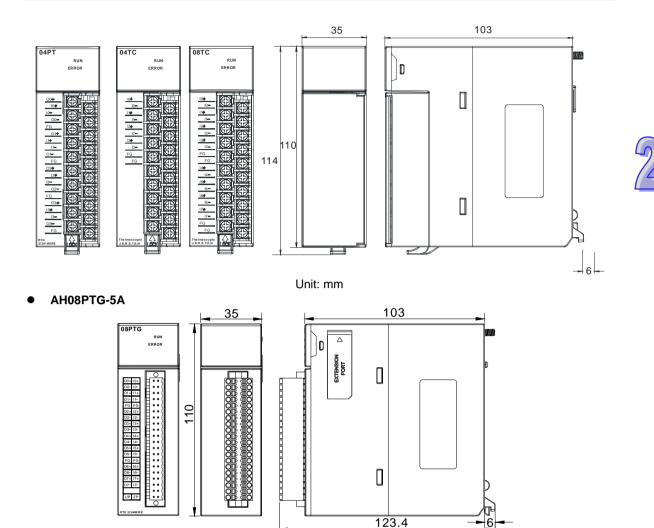
| Number | Name | Description |
|--------|------------|---------------------------------------|
| 8 | Set screw | Fixing the module |
| 9 | Connector | Connecting the module and a backplane |
| 10 | Projection | Fixing the module |



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

2.6.3 Dimensions

• AH04PT-5A/AH04TC-5A/AH08TC-5A



2.6.4 Arrangement of Input/Output Terminals

| AH04PT-5A | AH04TC-5A |
|-----------|-----------|
| 04PT | |
| RUN | RUN |
| ERROR | ERROR |
| | |
| | |
| | |
| | |
| | |
| | |
| O1- FG | FG FG |
| 02+ | |
| | |
| FG FG | |
| | |
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| | |

Unit: mm

| AH08TC-5A | AH08PTG-5A |
|---|---|
| 08TC RUN ERROR | 08PTG RUN ERROR |
| 10+ 11+ 11+ 12+ 12- 13+ 13- FG FG 14+ 14- 15+ 15- 15+ 15- 15+ 15- 15- 15+ 15- 15- 15- 15- 15- 15- 15- 15- | O0+10+ O0-10- O1+11+ O1-11- FG FG G2-12- O2-12- O3-13- O3-13- O5-16- FG FG O5-16- FG FG O5-16- FG FG O5-16- FG FG O6-16- O7-17- UP ZP RTD 2/3/4WIRE |

2.6.5 Setting Parameters

(1) AH04PT-5A

| Parameter Setting | 1 percentaria | | |
|--|----------------------------|--|----------------------------|
| CH0-CH3 Mode setting | AH04PT-5A | and the second | |
| Temperatur unit | MDS Information Normal E | xchange Area | |
| CHO-CH3 Average Time CHO-CH3 Calibration Channel Alarn Interrupt Enable | Module Name MDS Version | AH04PT-5A 1.00.00 | |
| Interrupt Enable Interrupt number Warming LED Conversion Flags(Read only PID RunStop PID AutoTune PID Mout Setting PID heater/cooler PID SV PID Cycle PID Kp PID Ki | MDS Build Date | 2012/07/14 | Import File Export File |
| Default | | | OK Cancel |

(2) AH08PTG-5A

AH500 Operation Manual

| AH08PTG-5A | AH08PTG-5A | | |
|---|-----------------------------|------------|------------|
| Mode setting Temperatur unit | MDS Information Normal Exch | nange Area | |
| Low Voltage Display Average Time Calibration | Module Name | AH08PTG-5A | |
| Channel Alarm Interrupt Enable | MDS Latest Version | 0.30.0 | |
| Interrupt number Warming LED Conversion Flags(Read only PID Run/Stop PID AutoTune | MDS Build Date | 2013/08/13 | |
| PID Mout Setting PID heater/cooler PID SV PID Cycle | | | Import Fil |

(3) AH04TC-5A

| Module Name MDS Latest Version | AH04TC-5A | |
|-----------------------------------|--------------------|---------------------------|
| MDS Build Date | 2012/10/22 | Import Fil Export Fil |
| | MDS Latest Version | MDS Latest Version 1.01.0 |

(4) AH08TC-5A

| AH08TC-5A | AH08TC-5A | | |
|--|-----------------------------|------------|----------|
| CHO-CH7 Mode setting Temperature unit Average Time | MDS Information Normal Excl | ange Area | |
| CH0~CH7 Calibration Channel Alarm | Module Name | AH08TC-5A | |
| Interrupt Enable Interrupt number | MDS Latest Version | 1.00.0 | |
| Warming LED | MDS Build Date | 2012/06/29 | |
| Conversion Flags PID Run/Stop | | | |
| PID AutoTune | | | |
| PID Mout Setting | | | |
| PID heaten/cooler PID SV | | | |
| PID Cycle | | | |
| PID Kp | | | Import F |
| PID Ki | | | |
| PID Kd 🐭 | | | Export F |

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 formatStop 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 | Stop bit: 1 stop bit or 2 stop bits | | |
| | Parity bit: none, an odd parity bit, or an even parity bit | | |
| format | Data bit: 7 data bits or 8 data bits | | |
| Communication | Modbus ASCII/RTU | | |
| | UD Link | | |
| protocol | BACnet MS/TP slave stations | | |

Electrical specifications

| Item | Specifications |
|-----------------|----------------|
| Supply voltage | 5 VDC |
| Electric energy | 1.5 W |
| consumption | 1.5 W |
| Insulation | 2,500 VDC |
| 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 |



Electrical specifications

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

• AH10DNET-5A

■ AH500 series CPU modules which are supported

| ltem | Specifications |
|------------|-------------------|
| Model name | AH500 series PLCs |

DeviceNet interface

| ltem | 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 |
|--------------------|---|
| | Master mode: Supporting explicit messages, and all kinds of I/O |
| | connections with the slave such as I/O polled connections, |
| Message type | bit-strobed connections, state changing connections, and |
| | cyclic connections |
| | Slave mode: Supporting explicit messages and a group 2 only server |
| | Standard: 125 kbps, 250 kbps and 500 kbps |
| Transmission speed | 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

| ltem | Specifications |
|------------|-------------------|
| Model name | AH500 series PLCs |

PROFIBUS-DP interface

| ltem | 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 |
|---------------------|--|
| modulo numo | |
| Product ID | 0B49 |
| Serial transmission | 0.0 libre: 40.0 libre: 24.05 libre: 45.45 libre: 02.75 libre: 407.5 libre: 500 |
| speed supported | 9.6 kbps; 19.2 kbps; 31.25 kpbs; 45.45 kbps; 93.75 kbps; 187.5 kbps; 500 |
| (auto-detection) | 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 | 0.6 khoo: 10.2 khoo: 45.45 (21.25) khoo: 02.75 khoo: 107.5 khoo: 500 khoo: | |
| 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

| ltem | Specifications | |
|----------------------|---|--|
| Transmission method | CAN | |
| Electrical isolation | 500 V DC | |
| Connector | Removable connector (5.08 mm) | |
| | It is suggested that users should use the Delta standard cables | |
| Communication cable | UC-DN01Z-01A and UC-DN01Z-02A. | |
| Communication cable | 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 | 10 kbps, 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 800 kbps, 1 Mbps | |
| speed | 10 kbps, 20 kbps, 30 kbps, 123 kbps, 230 kbps, 300 kbps, 800 kbps, 1 Mb | |

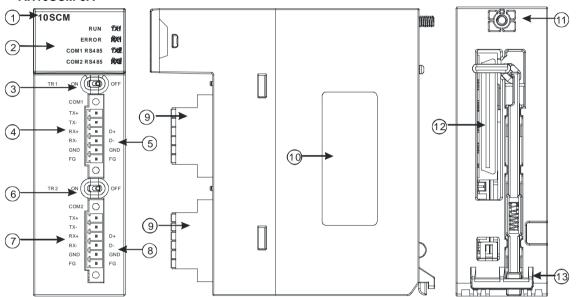


Electrical specifications

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

2.7.2 Profiles

• AH10SCM-5A



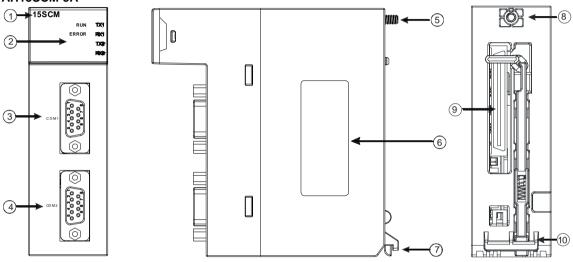
| Number | Name | Description | |
|--------|-------------------------------|---|--|
| 1 | Model name | Model name of the module | |
| | | Operating status of the module | |
| | RUN LED indicator (green) | ON: The module is running. | |
| | | OFF: The module stops running. | |
| | | Error status of the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

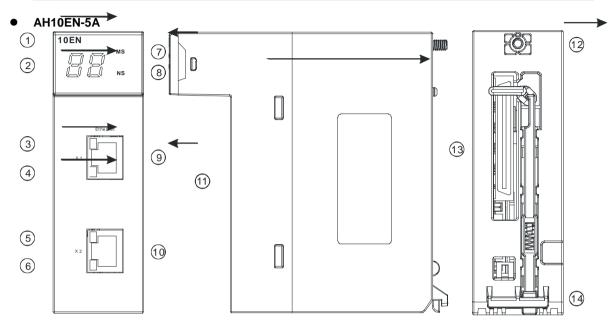


• AH15SCM-5A



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



| 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 |

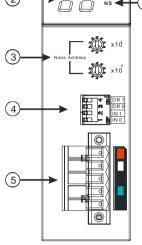


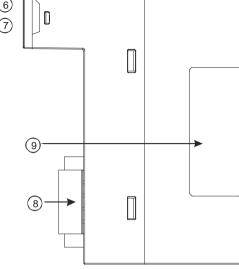
• AH10DNET-5A

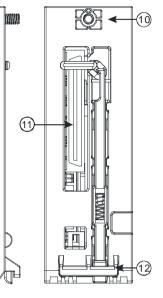
(1)

► 10DNET









| Number | Name | Description | |
|--------|--------------------------|--|--|
| 1 | Model name | Model name of the module | |
| 2 | Seven-segment | Display | |
| | display | -1 -7 | |
| 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 | 5 |
|---------|---|--------------|
| 063 | Available nodes on a DeviceNet network | Node Address |
| 6499 | 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:

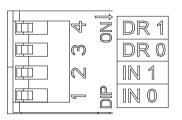
- After the station address of AH10DNET-5A is changed, users have to power AH10DNET-5A again, otherwise the change will not take effect.
- Please use a slotted screwdriver to turn the knobs with care, and do not scrape them.

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 |
| ON | ON | transmission speed mode |
| | | |
| IN 1 | Reser | ved |
| | ON | If the slave is disconnected, the previous |
| IN 0 | | I/O data is retained. |
| | OFF | If the slave is disconnected, the previous |
| | | I/O data is cleared. |



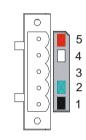


Points for attention:

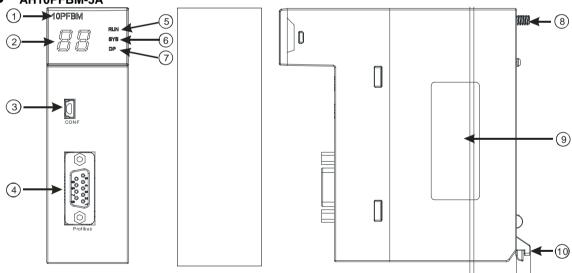
- After the setting of the function switch of AH10DNET-5A is changed, users have to power AH10DNET-5A again, otherwise the change will not take effect.
- Please use a slotted screwdriver to adjust the DIP switch with care, and do not scrape them.

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



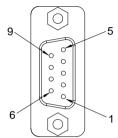
| Number | Name | Description |
|--------|-----------------------|--|
| 1 | Model name | Model name of the module |
| 2 | Seven-segment display | Display |
| 3 | CONF interface | The interface where the hardware configuration is downloaded |
| 4 | PROFIBUS-DP interface | PROFIBUS-DP connection |
| 5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

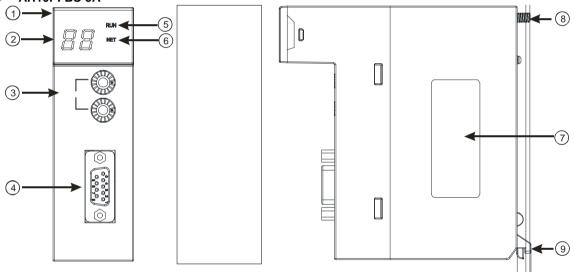
1. PROFIBUS-DP port

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



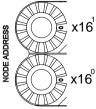
| Number | Name | Description |
|--------|-----------------------|--------------------------------|
| 1 | Model name | Model name of the module |
| 2 | Seven-segment display | Display |
| 3 | Address knobs | Setting the address |
| 4 | PROFIBUS-DP interface | PROFIBUS-DP connection |
| 5 | RUN LED indicator | 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 x16⁰, 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 |



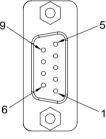
Example: If users need to set the node address of AH10PFBS-5A to 26 (decimal value), they have to turn the knob corresponding to x16¹ to "1", and the knob corresponding to x16⁰ to "A". 26 (decimal value)=1A (hexadecimal value)=1x16¹+Ax16⁰.

Points for attention:

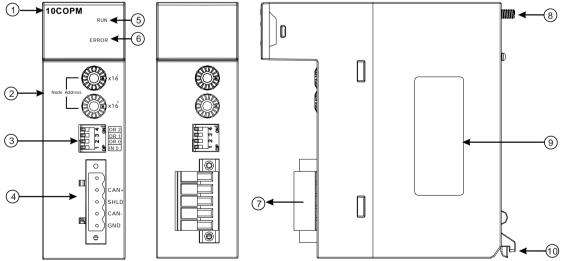
- If users set the node address of AH10PFBS-5A when AH10PFBS-5A is not supplied with power, they have to power AH10PFBS-5A after the node address of AH10PFBS-5A is set.
- If users change the node address of AH10PFBS-5A when AH10PFBS-5A is powered, the change will not take effect immediately after the 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 | 9. | |
| 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 | 6 | |
| 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 |

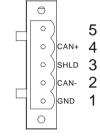


| Number | Name | Description |
|--------|--------------------------|----------------------------|
| 6 | ERROR LED indicator | Error status of the module |
| 7 | Removable terminal block | Terminals |
| 8 | Set screw | Fixing the module |
| 9 | Label | Nameplate |
| 10 | Projection | Fixing the module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

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 | s ද ද ද x16 |
|----------|------------------------------|-------------|
| 1~7F | Valid CANopen node address | E ADDR |
| 0, 80~FF | Invalid CANopen node address | ₽ € x16 |

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 |
| | | Reserved | | |

| | | Î | |
|----|--------|----|-------|
| | | 6 | DR 2 |
| ЩП | ന | | DR 1 |
| Щ | \sim | | DR 0 |
| щ | _ | 0b | I N 0 |

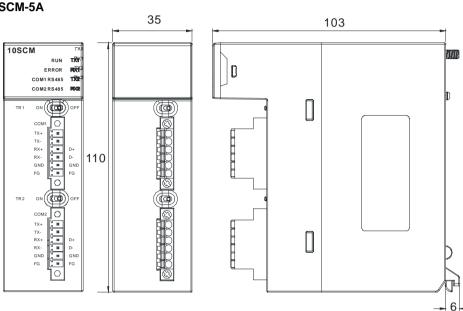


Points for attention:

- 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.

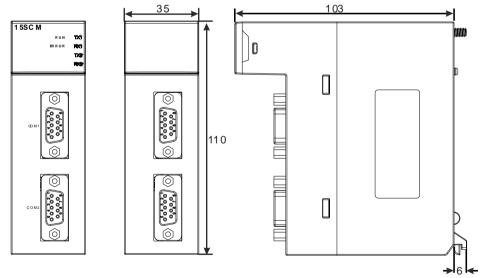
2.7.3 Dimensions

• AH10SCM-5A





• AH15SCM-5A

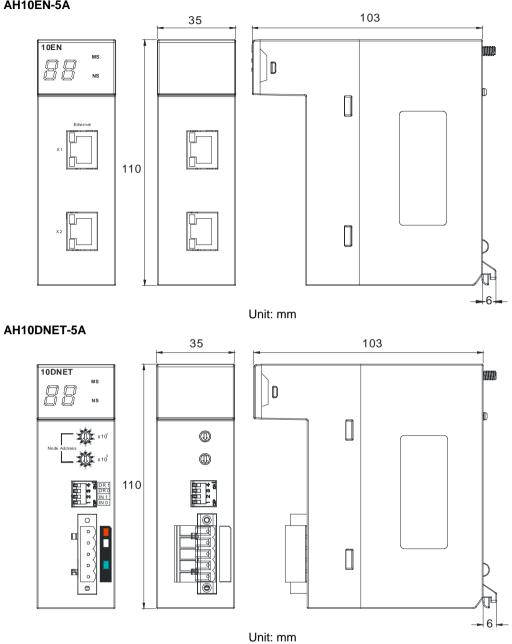


Unit: mm

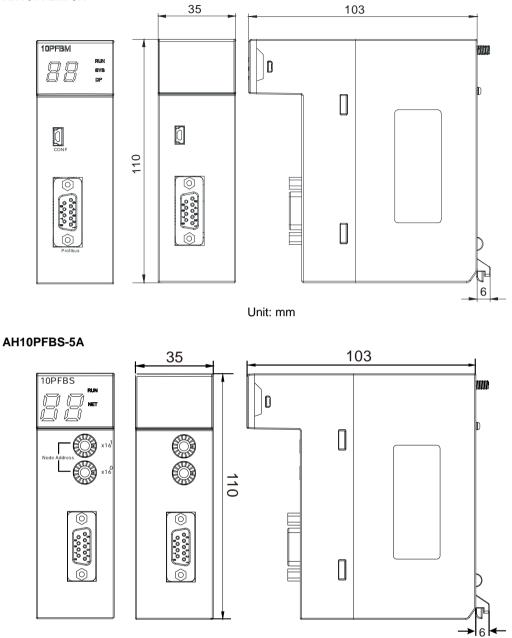
AH10EN-5A •



•

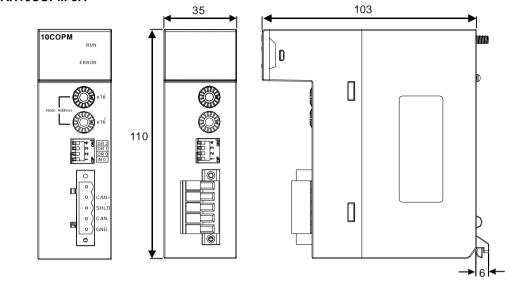


• AH10PFBM-5A

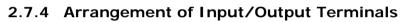


Unit: mm

• AH10COPM-5A



Unit: mm



| AH10SCM-5A | AH10DNET-5A |
|--|--|
| 10SCM RUN TX1 ERROR RX1 COM1 RS485 TX2 COM2 RS485 RX2 | 10DNET MS I NS |
| TR 1 ON COM COM1 OFF TX+ TX+ RX+ RX+ RX+ TX- TX- TX- TX- TX- TX- TX- TX- | Node Address X10 X10 X10 X10 X10 X10 |
| FG TR 2 ON COM2 OFF COM2 O TX+ U U U TX+ U U U TX+ U U U TX+ U U | |
| RX+ RX+ RX- GND FG FG FG | |

| AH10COPM-5A | | | |
|-------------|--|--|--|
| | 10COPM | | |
| | RUN | | |
| | ERROR | | |
| | Node Address | | |
| | + + - <th></th> | | |
| | CAN+ CAN+ SHLD CAN- | | |



2.7.5 Setting Parameters

(1) AH10EN-5A

| , | | | | |
|--|--|---------------------|----|----------------------------|
| Parameter Setting | | | | |
| AH10EN-5A Network Parameters Function List P Filter Parameters IO Mapping Parameters | AH10EN-5A MDS Information. Normal Excha Module Name MDS Version MDS Build Date | ange Area AH10EN-5A | | Import File Export File |
| Default | | | OK | Cancel |

(2) AH10SCM-5A

| Parameter Setting | | |
|---|---|---|
| AHIOSCM-5A OMI Setting OM2 Setting BACnet Setting | AH10SCM-5A [MDS Information] Normal Ex Module Name MDS Version MDS Build Date | Shange Area AH10SCM-5A 1.00.01 2012/08/06 |
| Default | | Import F Export F OK Cance |

(3) AH15SCM-5A

| Parameter Setting | | | |
|------------------------------|--------------------------|---|-------------|
| E-AH15SCM-5A | AH15SCM-5A | and the second se | |
| COM1 Setting COM2 Setting | MDS Information Normal E | xchange Area | |
| BACnet Setting | Module Name | AH15SCM-5A | |
| | MDS Version | 0.35.00 | |
| | MDS Build Date | 2016/09/22 | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | Import File |
| | | | Export File |
| Default | | | OK Cancel |

(4) AH10DNET-5A

| Parameter Setting | | |
|--|--|--------------------------------------|
| AH10DNET-5A Parameters of IO mapping | AH10DNET-5A MDS Information Normal Exc | nange Area |
| | Module Name MDS Version MDS Build Date | AH10DNET-5A 1.01.00 2013/01/22 |
| Default | | Import File Export File OK Cancel |

(5) AH10PFBS-5A

| Parameter Setting | | | |
|--|--|--------------------------------------|---|
| AH10PFBS-5A Conversion Flags (Read only) | AH10PFBS-5A MDS Information Normal Exchange A | irea | |
| | Module Name MDS Version MDS Build Date | AH10PFBS-5A 1.00.01 2013/05/02 | |
| Default | | | Import File Export File DK Cancel |

(6) AH10PFBM-5A

| Parameter Setting | | | |
|--|--|-------------|---------------|
| AH10PFBM-5A IO Mapping Paramenters | AH10PFBM-5A MDS Information Normal Exchange A | Area | |
| | Module Name MDS Version | AH10PFBM-5A | |
| | MDS Build Date | 2013/05/21 | |
| | | | |
| | | | Import File |
| Default | | | OK Cancel |

(7) AH10COPM-5A

| Parameter Setting | | | |
|---|---|-------------------------------------|----------------------------|
| AH10COPM-5A Mode setting and I/O mapping Master Setting | AH10COPM-5A MDS Information Normal Exchange | Area | |
| | Module Name MDS Latest Version MDS Build Date | AH10COPM-5A 1.00.0 2013/12/20 | Import File Export File |
| Default | | | OK Cancel |

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 chann | nels | 2 channels |
| | Input (differential input) | CH0: X0.8+, X0.8-, X0.9+, and X0.9- CH1: X0.10+, X0.10-, X0.11+, and X0.11- |
| Input signal | 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 |
| | Maximum frequency of counting | The maximum frequency is 200 kHz. |
| Specifications | 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 9999999999. The number of input pulses is in the range of -2147483648 to 2147483648. |
| | Туре | General count Circular count |
| | Input (differential input) | CH0: X0.0+ and X0.0- CH1: X0.1+ and X0.1- |
| RESET input | Signal level | 5~24 V DC |
| | Maximum current | 15 mA |
| Comparison | 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. |
| output | Signal level | 24 V DC |
| | Maximum current | 15 mA |
| Weight | | 200g |



• AH04HC-5A

| lte | m | Specifications |
|----------------------|-------------------------------------|--|
| Connector | | A connector made with great precision is used. It has to be connected to an external terminal module. |
| Number of chan | nels | 4 channels |
| | 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- |
| Input signal | 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 |
| | Maximum frequency of counting | The maximum frequency is 200 kHz. |
| Specifications | 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 9999999999. The number of input pulses is in the range of -2147483648 to 2147483648. |
| | Туре | 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 | | 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

| l t a m | | Specifications | | | |
|---|------------------------|---|---------------------------|--------------------|--|
| | Item | 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 module | n with a CPU | 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 dat exchange. | | | |
| Motor cont | rol | differential output. 1. Pulse/Direction 2. Counting up/Counti 3. A/B-phase output | pulse output modes. Thes | se modes adopt the | |
| Maximum s | 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 co port | ommunication | Mini USB port | | | |
| Number of instruction | | 27 | | | |
| Number of instruction | | 130 | | | |
| OX0~99 (motion subroutine/positioning pro the program stops. (END)) M00~M01, M03~M101, and M103~M65535 The execution of the program pauses. (WA Users can use them freely. | | END)) 01, and M103~M65535: program pauses. (WAIT) | n): M02 (The execution of | | |
| G-code G0 (rapid positioning), G1 (linear interpolation), G2 (circular interpolation), G2 (circular interpolation, counterclockwise), G4 (dwell), plane selection), G90 (absolute programming), and G91 (incrementar programming) | | wise), G4 (dwell), G17 (XY | | | |
| Weight | | 200g | | | |



Description of the terminals

| Terminal | Description | Response | Maximum input | |
|--|---|----------------|---------------|---------|
| Terminal | Description | characteristic | Current | Voltage |
| X0.0, X0.1, X0.8, X0.9, X0.12, and X0.13 | They are single/A/B-phase input terminals. 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. X0.8 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 | The high-speed pulse output terminals are transistors whose collectors are open collectors. 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- | They are differential output terminals. 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 k Ω (2 W) resistor in parallel.



• AH10PM-5A

2

| 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 | d | Single axis: 1M PPS Multi-axis interpolation: 1M PPS |
| Input signal | Operating switch | STOP/RUN (automatic/manual switch) |
| input signai | 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 comm | unication | Mini USB port |
| port | | Ethernet port |
| Expansion stor | age device | Mini SD card The maximum capacity is 32 GB. |
| Number of basi instructions | C | 27 |
| Number of appl instructions | ied | 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 |

| Terminal | Description | Response | | ım input |
|--|--|----------------|---------|----------|
| | | characteristic | Current | Voltage |
| X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3- | They are differential input terminals. 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 1. X0.2+ and X0.2- are the RESET input terminals for counter 4. X0.3+ and X0.3- are the RESET input terminals for 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 | They are single/A/B-phase input terminals. 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 | They are single/A/B-phase input terminals. 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 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 2. M0.13 is the B-phase input for counter 2. M0.15 is the B-phase input for counter 5. High-speed comparison and catch: The terminals can function as trigger signals for high-speed catches. | 100 kHz (*1) | 15 mA | 24 V |
| Y0.8, Y0.9, Y0.10, and Y0.11 | The high-speed pulse output terminals are transistors whose collectors are open collectors. 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 |

2

| Toursinal | Description | Response | Maximum input | |
|--|---|----------------|---------------|---------|
| Terminal | Description | characteristic | 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 | | | |
| 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- | comparison output terminals. 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 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 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 k Ω (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 | |
| | | Users can set the initial | register involved in the d | ata exchange in a CPU | |
| Connection with | n a CPU | module, and the numbe | er of registers involved in t | he data exchange in the | |
| module | | CPU module. Four hund | dred data registers at mos | st can be involved in the | |
| | | data exchange. | | | |
| Motor control | | differential output. 1. Pulse/Direction | | These modes adopt the | |
| | | Counting up/Coun A/B-phase output | ung down | | |
| Maximum speed | I | Single axis: 1M PPS Multi-axis interpolation: | 1M PPS | | |
| | Operating switch | STOP/RUN (automatic/manual switch) | | | |
| Input signal | Detector | |).1-, X0.2+, X0.2-, X0.3+, 12, X0.13, X0.14, X0.15, | | |
| Servo output | | Y0.0+, Y0.0-, Y0.2+, Y0 |).2-, Y0.4+, Y0.4-, Y0.6+, | Y0.6-, Y0.1+, Y0.1-, | |
| Output signal | signal | Y0.3+, Y0.3-, Y0.5+, Y0 |).5-, Y0.7+, Y0.7-, Y0.8, Y | 0.9, 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 | OX0~OX99 (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 | Maximum input | |
|---|---|----------------|---------------|---------|
| | Description | characteristic | Current | Voltage |
| X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3- | They are differential input terminals. 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 | They are single/A/B-phase input terminals. 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- | They are differential input terminals. 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. | 200 kHz | 15 mA | 5~24 V |



| Terminal | Description | Response | Maximum input | |
|---|---|----------------|---------------|---------|
| reminal | Description | characteristic | Current | Voltage |
| X0.10, X0.11, X0.12, X0.13, X0.14, X0.15, X1.0, and X1.1 | They are differential input terminals. 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 4. X0.14 is the A-phase input for counter 5. | 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 | The high-speed pulse output terminals are transistors whose collectors are open collector. 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- | They are differential output terminals. 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 | Maximu | |
|----------|-------------|----------------|---------|---------|
| | | characteristic | 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 k Ω (2 W) resistor in parallel.

• AH20MC-5A

| AHZUMC-SA | | Specifications | | |
|--------------------------------|---------------------------|---|--|--|
| Item | | 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 spee | d | Single axis: 1M PPS Two-axis interpolation: 1M PPS | | |
| | Operating switch | STOP/RUN (automatic/manual switch) | | |
| Input signal | 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 stor | age device | Mini SD card The maximum capacity is 32 GB. | | |
| Number of basi instructions | С | 27 | | |
| Number of appl instructions | ied | 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 | | |

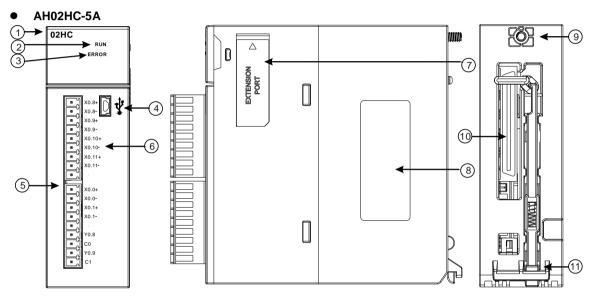


| Description of the | | Response | Maximu | num input | |
|---|---|----------------|--------|-----------|--|
| Terminal | Description | characteristic | | Voltage | |
| X0.0+, X0.0-, X0.1+, X0.1-, X0.2+, X0.2-, X0.3+, and X0.3- | They are differential input terminals. The functions of the terminals: 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- | They are differential input terminals. 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. | 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- | They are differential input terminals. 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. | 200 kHz | 15 mA | 5~24 V | |



| Terminal | Description | Response | Maximum input | |
|------------------------------------|---|----------------|---------------|---------|
| Terminal | Description | characteristic | Current | Voltage |
| Y0.8, Y0.9, Y0.10, and Y0.11 | The high-speed pulse output terminals are transistors whose collectors are open collectors. 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 |

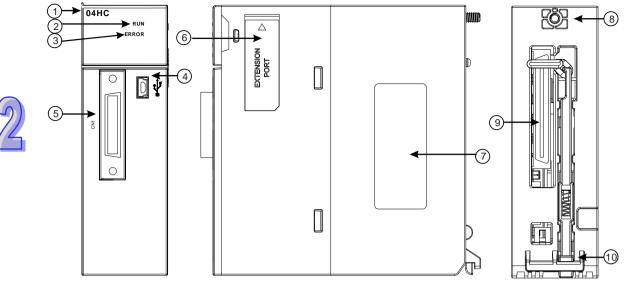
2.8.2 Profiles



| 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 | | |

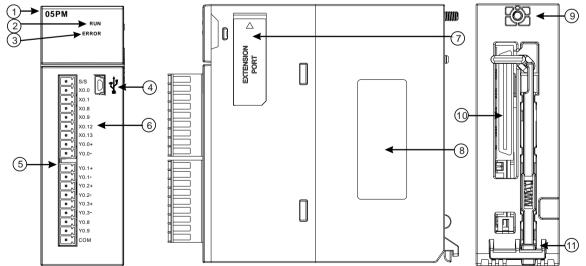


• AH04HC-5A

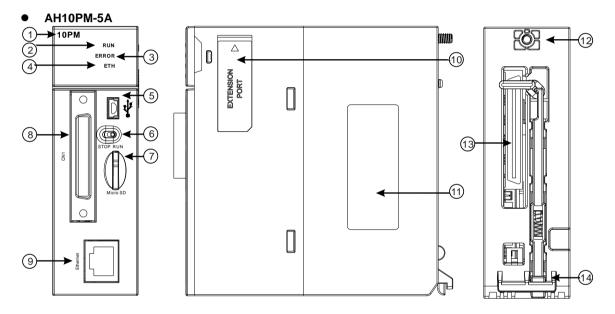


| Number | Name | Description | |
|--------|--|--|--|
| 1 | Model name | Model name of the module | |
| 2 | RUN LED indicator (green) | Operating status of the module ON: The module is running. OFF: The module stops running. | |
| 3 | ERROR LED indicator (red) | Error status of the module Blinking: The 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 | |



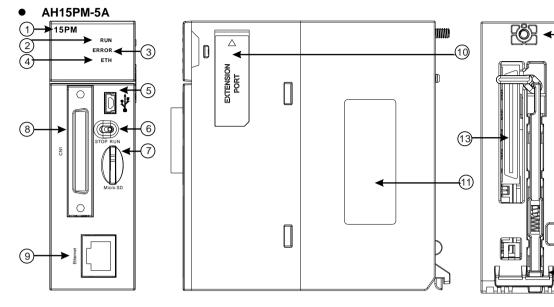
| Number | Name | Description |
|--------|-----------------------|--|
| 1 | Model name | Model name of the module |
| | RUN LED indicator | Operating status of the module |
| 2 | (green) | ON: The module is running. |
| | (green) | OFF: The module stops running. |
| 3 | ERROR LED indicator | Error status of the module |
| 3 | (red) | Blinking: The module is abnormal. |
| | Ethernet connection | Status of the Ethernet connection |
| 4 | LED indicator (green) | 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. |
| 0 | RUN/STOP SWIICH | 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 |



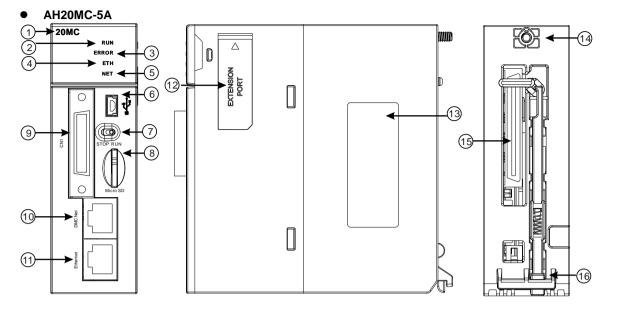
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14)

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



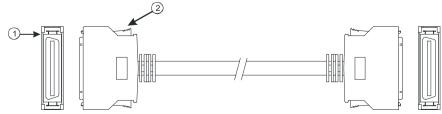
| Number | Name | Description |
|--------|-----------------------|--|
| 1 | Model name | Model name of the module |
| | RUN LED indicator | Operating status of the module |
| 2 | (green) | ON: The module is running. |
| | (green) | OFF: The module stops running. |
| 3 | ERROR LED indicator | Error status of the module |
| | (red) | Blinking: The module is abnormal. |
| | Ethernet connection | Status of the Ethernet connection |
| 4 | LED indicator (green) | 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 |



| 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

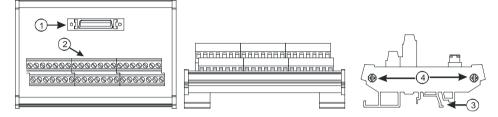
1. I/O extension cable UC-ET010-13B/UC-ET010-15B



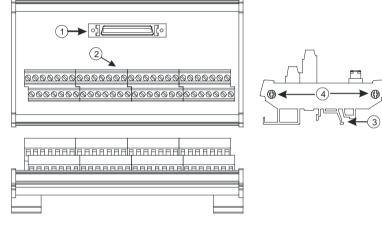
| Number | Name | Description |
|--------|-----------|--|
| 1 | Connector | Connecting a motion control module and an external terminal module UC-ET010-13B is a 36-pin I/O extension cable for AH04HC-5A and AH20MC-5A. UC-ET010-15B is a 50-pin I/O extension cable for AH10PM-5A and AH15PM-5A. |
| 2 | Clip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



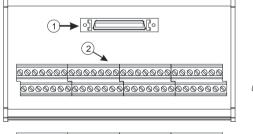
2. External terminal module for AH04HC-5A and AH20MC-5A: UB-10-IO16C

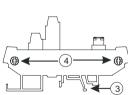


3. External terminal module for AH10PM-5A: UB-10-IO24CC



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



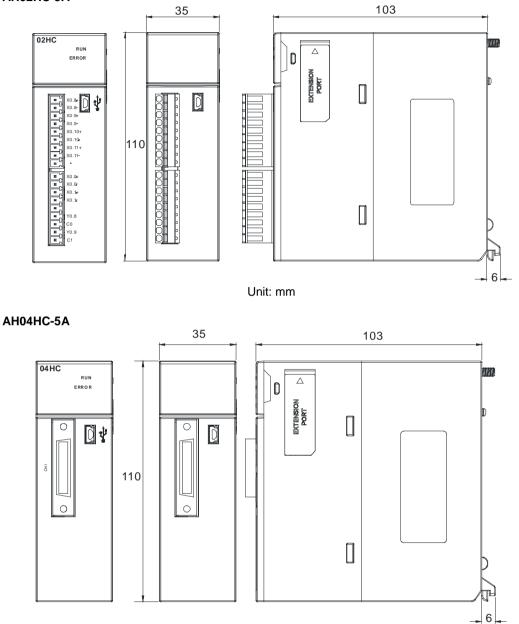


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|---|----|-------|-----|-------|-------|-------|------|--|
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| | | | | | | | | |
| | | | | | | | | |

| 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

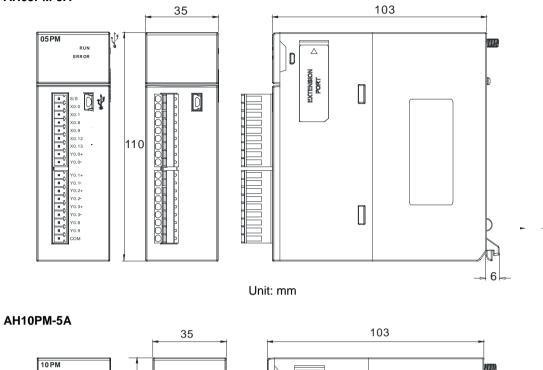


Unit: mm

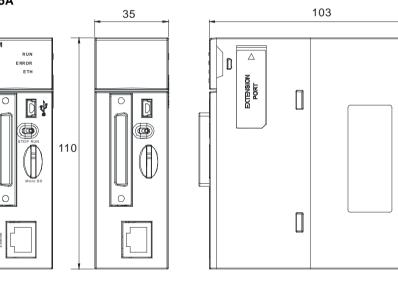
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AH05PM-5A

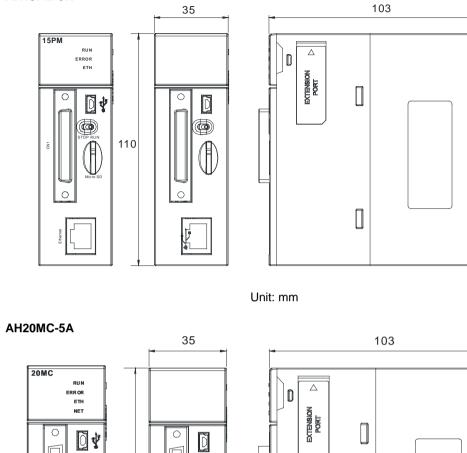






Unit: mm

• AH15PM-5A



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Unit: mm

• I/O extension cable, and external terminal module

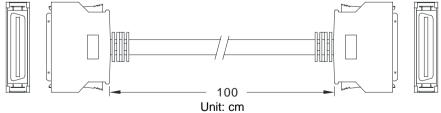
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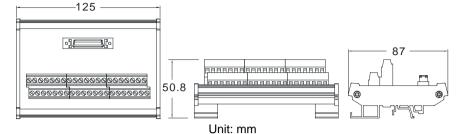
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1. 36-pin I/O extension cable for AH04HC-5A and AH20MC-5: UC-ET010-13B

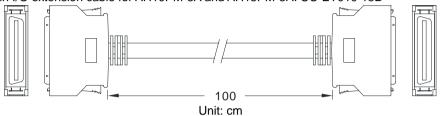
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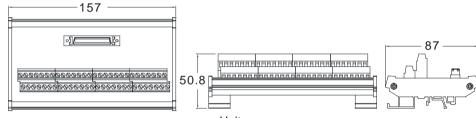
2. External terminal module for AH04HC-5A and AH20MC-5A: UB-10-IO16C





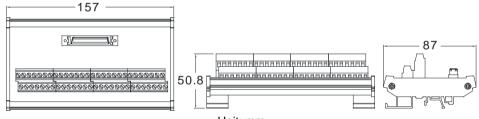


External terminal module for AH10PM-5A: UB-10-IO24CC 4.



Unit: mm

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



Unit: mm

2.8.4 Arrangement of Input/Output Terminals

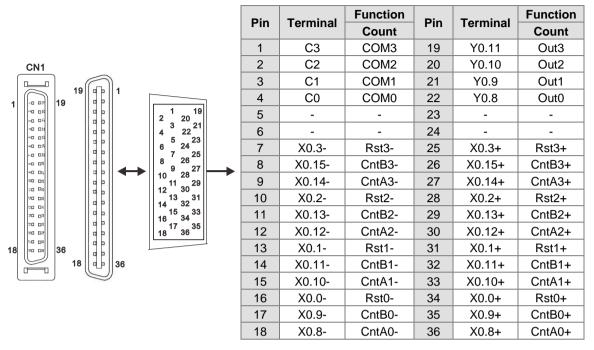
AH02HC-5A

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



3.

• AH04HC-5A



• AH05PM-5A

| Terminal | Fund | ction | Terminal | Fund | ction |
|----------|-------|-------|----------|-------|-------|
| Terminai | Pulse | Count | Terminal | 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- | - | СОМ | - | - |



AH10PM-5A •

| | | | Dia | Terminel | Fur | nction | Dia | Tarrainal | Fun | ction |
|----|-------------------------|-----|------|----------|-----------|-------------|-----|-----------|-----------|-------------|
| | | | Pin | Terminal | Pulse | Count | Pin | Terminal | 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 | - |
| ſ | CN1 | ٦ | 5 | NC | - | | 30 | NC | - | - |
| | | | 6 | Y0.7- | B3- | - | 31 | Y0.7+ | B3+ | - |
| 1 | 80 D* | 26 | 7 | Y0.6- | A3- | - | 32 | Y0.6+ | A3+ | - |
| | ~□ DR 30 DR 20 DR | | 8 | Y0.5- | B2- | - | 33 | Y0.5+ | B2+ | - |
| | | | 9 | Y0.4- | A2- | - | 34 | Y0.4+ | A2+ | - |
| | | | 10 | Y0.3- | B1- | - | 35 | Y0.3+ | B1+ | - |
| | 20 D2 80 D2 | | 11 | Y0.2- | A1- | - | 36 | Y0.2+ | A1+ | - |
| | 20 D2 | | 12 | Y0.1- | B0-/CLR5- | - | 37 | Y0.1+ | B0+/CLR5+ | - |
| | 20 D8 | | 13 | Y0.0- | A0-/CLR4- | - | 38 | Y0.0+ | A0+/CLR4+ | - |
| | 20 D2 | | 14 | NC | - | - | 39 | NC | - | - |
| | 20 D2 20 D3 | | 15 | NC | - | - | 40 | S/S | S/S | S/S |
| | 80 D8 80 D8 80 D8 | | 16 | X0.15 | DOG3 | CntB3/CntB5 | 41 | X0.14 | DOG2 | CntB3/CntA5 |
| | 20 DS | | 17 | X0.13 | DOG1 | CntB2/CntB4 | 42 | X0.12 | DOG0 | CntA2/CntA4 |
| 25 | 80 08 | 50 | 18 | X0.11 | DOG5 | CntB1 | 43 | X0.10 | DOG4 | CntA1 |
| | F |] | 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+ |
| • | AH1 | 5PN | 1-5A | | | | | | | |

AH15PM-5A

| | | Dim | Tanninal | Fu | nction | Dire | Tamainal | Fur | nction |
|-------------------------|----|-----|----------|-------|--------------|------|----------|-------|-------------|
| | | Pin | Terminal | Pulse | Count | Pin | Terminal | Pulse | Count |
| | | 1 | Y0.11 | CLR3 | - | 26 | Y0.10 | CLR2 | - |
| | | 2 | Y0.9 | CLR1 | - | 27 | Y0.8 | CLR0 | |
| 014 | | 3 | COM | COM | - | 28 | Y0.7+ | B3+ | - |
| CN1 | | 4 | Y0.7- | B3- | - | 29 | Y0.6+ | A3+ | - |
| | | 5 | Y0.6- | A3- | | 30 | Y0.5+ | B2+ | - |
| 1 -= ¤% | 26 | 6 | Y0.5- | B2- | - | 31 | Y0.4+ | A2+ | - |
| *0 0% *0 0% *0 0% | | 7 | Y0.4- | A2- | - | 32 | Y0.3+ | B1+ | - |
| | | 8 | Y0.3- | B1- | - | 33 | Y0.2+ | A1+ | - |
| *D D8 | | 9 | Y0.2- | A1- | - | 34 | Y0.1+ | B0+ | - |
| 20 D8 | | 10 | Y0.1- | B0- | - | 35 | Y0.0+ | A0+ | - |
| | | 11 | Y0.0- | A0- | - | 36 | S/S | S/S | S/S |
| 20 D8 20 D8 | | 12 | X1.5 | CHG3 | - | 37 | X1.4 | CHG2 | - |
| | | 13 | X1.3 | CHG1 | - | 38 | X1.2 | CHG0 | - |
| 50 D3 50 D3 | | 14 | X1.1 | LSN3 | - | 39 | X1.0 | LSP3 | - |
| 20 03 20 08 20 09 | | 15 | X0.15 | LSN2 | CntB3/CntB5 | 40 | X0.14 | LSP2 | CntB3/CntA5 |
| | | 16 | X0.13 | LSN1 | CntB2/CntB4 | 41 | X0.12 | LSP1 | CntA2/CntA4 |
| 25 | 50 | 17 | X0.11 | LSN0 | CntB1 | 42 | X0.10 | LSP0 | CntA1 |
| | ı | 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+ |



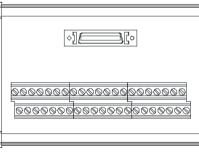
| 24 | X0.1- | Pg1- | Rst1- | 49 | X0.1+ | Pg1+ | Rst1+ |
|----|-------|------|-------|----|-------|------|-------|
| 25 | X0.0- | Pg0- | Rst0- | 50 | X0.0+ | Pg0+ | Rst0+ |

• AH20MC-5A

| | Pin | Terminal | F | unction | Din | Terminal | F | Function |
|---|-----|----------|-------|-------------------|-----|----------|-------|---------------|
| | PIN | Terminal | Pulse | Count | Pin | Terminal | Pulse | Count |
| | 1 | C3 | - | COM3 | 19 | Y0.11 | - | Out3 |
| | 2 | C2 | - | COM2 | 20 | Y0.10 | - | Out2 |
| | 3 | C1 | - | COM1 | 21 | Y0.9 | - | Out1 |
| CN1 | 4 | C0 | - | COM0 | 22 | Y0.8 | - | Out0 |
| | 5 | NC | - | - | 23 | NC | - | - |
| 1 🕞 🖻 19 | 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+ |
| ~0 D% ~0 D% ≈0 D% ≈0 D% | 9 | X0.14- | DOG2- | CntA3-/ CntA5+ | 27 | X0.14+ | DOG2+ | CntA3+/CntA5+ |
| | 10 | X0.2- | - | Rst2-/Rst4- | 28 | X0.2+ | - | Rst2+/Rst4+ |
| 20 D8 20 D5 20 D8 20 D8 20 D8 | 11 | X0.13- | DOG1- | CntB2-/ CntB4- | 29 | X0.13+ | DOG1+ | CntB2+/CntB4+ |
| 18 36 | 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



| 00 | 00 | | | | | | | | | | | | | | | | | | | |
|-------|-------|------|------|-----|-----|-------|--------|--------|-------|--------|--------|-------|--------|--------|-------|-------|-------|-----|-----|-----|
| 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 |
| | | 1 | | | | | | | | | | | | | | | | | | |
| 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

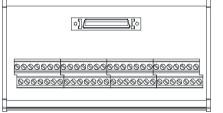
| <u>୦୦୧୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦୦</u> | |
|--|--|

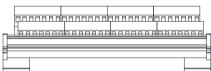


| 1 st from the | СЗ | C2 | C1 | CO | N/C | VO 7 | VOG | VOF | Y0.4- | V0.2 | V0.2 | V0 1 | VOO | N/C |
|---------------------------|-------|-------|--------|--------|------|-------|-------|-------|-------|-------|-------|--------|-------|------|
| upper left | 03 | 02 | | 0 | IN/C | 10.7- | 10.0- | 10.5- | 10.4- | 10.3- | 10.2- | 10.1- | 10.0- | N/C |
| 15 th from the | N/C | X0.15 | YO 13 | X0 11 | Y0 0 | N/C | N/C | X0 3- | X0.2- | X0 1- | X0 0- | 24G | 24G | FE |
| upper left | | 70.15 | 70.15 | 70.11 | 70.5 | | N/C | 70.5- | 70.2- | 70.1- | 70.0- | 240 | 240 | |
| 1 st from the | V0 11 | Y0.10 | Y0.9 | Y0.8 | N/C | V0 71 | VOGI | | V0 41 | V0 21 | V0 21 | V0 1 . | Y0.0+ | N/C |
| lower left | 10.11 | 10.10 | 10.9 | 10.0 | IN/C | 10.7+ | 10.0+ | 10.5+ | 10.4+ | 10.5+ | 10.2+ | 10.1+ | 10.0+ | IN/C |
| 15 th from the | S/S | X0.14 | V0 12 | V0 10 | | N/C | N/C | V0.21 | X0.2+ | V0 1. | V0 01 | N/C | 24V | 24V |
| lower left | 3/3 | 70.14 | AU. 12 | AU. 10 | 70.0 | IN/C | IN/C | ×0.5+ | AU.Z+ | ×0.1+ | ∧0.0+ | IN/C | 24 V | 24 V |



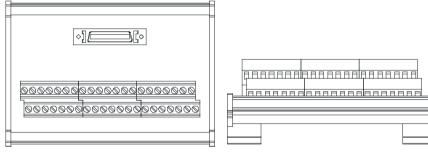
3. External terminal module for AH15PM-5A: UB-10-IO34CC





| 1 st from the upper left | Y0 11 | Y0.9 | сом | Y0 7- | Y0 6- | Y0 5- | Y0 4- | Y0.3- | Y0 2- | Y0 1- | Y0 0- | X1 5 | X1.3 | X1 1 |
|---|--------|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|------|------|------|
| | | | | | | | | | | | | | | ×1.1 |
| 15 th 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 |
| upper left | /10.10 | //0.10 | //0.11 | /10.0 | /.0.0 | 7.0.7 | 7.0.0 | //0.0 | 7.0.2 | //// | 10.0 | 210 | 210 | |
| 1 st from the | V0 10 | V0.8 | V0 7± | V0 6+ | V0 5± | V0 1+ | V0 3∓ | V0 21 | V0 1⊥ | V0 0+ | S/S | X1 / | X1 2 | X1.0 |
| lower left | 10.10 | 10.0 | 10.71 | 10.01 | 10.01 | 10.41 | 10.01 | 10.21 | 10.11 | 10.01 | 0,0 | 71.4 | 71.2 | 71.0 |
| 15 th from the lower left | X0 14 | X0 12 | X0 10 | XU QT | XU 81 | X0.6 | X0.4 | XU 3T | X0 21 | X0 1⊥ | X0 0+ | N/C | 24V | 24V |
| lower left | 70.14 | 70.12 | 70.10 | 70.94 | 7.0.0+ | 7.0.0 | 70.4 | 70.54 | 70.27 | 70.14 | 7.0.0+ | 10/0 | 27V | 27V |

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



| СЗ | 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

| Parameter Setting | | |
|--|--|----------------------------|
| AH02HC-5A CH0-1 Input filter CH0-1 Count cycle times CH0-1 Parameter setting CH0-1 Parameter setting CH0-1 Pre-scale Unit magnific CH0-1 Pre-scale Setting value CH0-1 Number of Movernetin CH0-1 Upper/Upper limite val CH0-1 Lover/Upper limite val CH0-1 Lover/Upper limite val CH0-1 Comparison value settin CH0-1 Number of Intrupt setting | MDS Version 1.00.00 MDS Build Date 2013/12/11 | Import File Export File |
| Default | OK | Cancel |

(2) AH04HC-5A

| Parameter Setting | | |
|---|--|----------|
| AHOMHC-5A CHO-3 Input Pulse type CHO-3 Input filter CHO-3 Count cycle times CHO-3 Count cycle times CHO-3 Parameter setting CHO-3 Pre-scale setting value CHO-3 Pre-scale setting value CHO-3 Upper/Lower limite val CHO-3 Upper/Lower limite val CHO-3 Lower/Upper limite val CHO-3 Comparison value settin CHO-3 Number of Intropt sett | MDS Version 1.00.00 MDS Build Date 2013/12/11 | ort File |
| Default | OK | 'ancel |

(3) AH05PM-5A

| Parameter Setting | | | | |
|--|--|------------------------------------|----|--------------------------------------|
| ☐ AH05PM-5A AHCPU and AH05PM D devic AHCPU and AH05PM M devi | | nge Area | | |
| | Module Name MDS Version MDS Build Date | AH05PM-5A 1.00.00 2012/07/14 | | |
| Default | | | OK | Import File Export File Cancel |

(4) AH10PM-5A

| Parameter Setting | | | | |
|--|--|------------|----|-------------|
| AH10PM-5A AHCPU and AH10PM D devic AHCPU and AH10PM M devi | AH10PM-5A MDS Information Normal Exchange | ge Area | | 1 |
| | Module Name | AH10PM-5A | | |
| | MDS Version | 1.00.00 | | |
| | MDS Build Date | 2012/07/14 | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | Import File |
| | | | | Export File |
| Default | | | OK | Cancel |

(5) AH15PM-5A

| Parameter Setting | | | | |
|--|---|-----------------------------------|----|--------------------------------------|
| ☐ AH15PM-5A — AHCPU and AH15PM D devic — AHCPU and AH15PM M devi | AH15PM-5A MDS Information Normal Exchange | Area | | 1 |
| | Module Name MDS Latest Version MDS Build Date | AH15PM-5A 1.00.0 2013/01/16 | | |
| Cefault | | | OK | Import File Export File Cancel |

(6) AH20MC-5A

| Parameter Setting | | | |
|-----------------------------|--|------------------------------------|-------------|
| - AHCPU and AH20MC D device | AH20MC-5A | Area | |
| | Module Name MDS Version MDS Build Date | AH20MC-5A 1.00.00 2012/07/14 | Import File |
| Default | | | OK Cancel |

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 | |
| | Standard mode: 125 kbps, 250 kbps, and 500 kbps | |
| Communication speed | Extended mode: 10 kbps, 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, | |
| | 800 kbps, and 1 Mbps | |
| O | Delta shielded twisted pair | |
| Communication cable | (Two communication cables, two power cables, and one shielded cable) | |
| Weight | 150g | |

• AHRTU-PFBS-5A

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

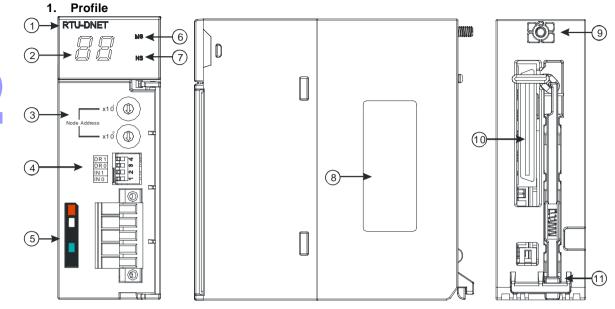
AHRTU-ETHN-5A

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



2.9.2 Profiles



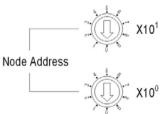


| Number | Name | Description |
|--------|-----------------------|--|
| 1 | Model name | Model name of the module |
| 2 | Seven-segment display | Display |
| 3 | Address knob | Setting the address |
| 4 | Function switch | Setting the functions |
| 5 | DeviceNet connector | DeviceNet is used to interconnect 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 |
|---------|--|
| 063 | Available nodes on a DeviceNet network |
| 6499 | 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:

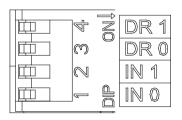
- When the power supply is cut off, the node address is set. After the setting of the node address is complete, AHRTU-DNET-5A can be supplied with power.
- If AHRTU-DNET-5A is running, changing the node address is unavailable.
- Please use a slotted screwdriver to turn the knobs with care, and do not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



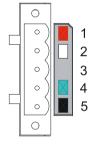


Points for attention:

- 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.

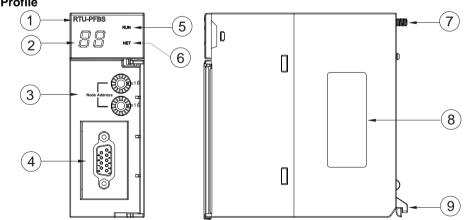
4. DeviceNet connector

| 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 |

| PIN | PIN name | Description | |
|-----|-----------|--------------------------------|-----|
| 1 | | N/C | |
| 2 | | N/C | 9 9 |
| 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 | 6 |
| 8 | RxD/TxD-N | Receiving/Sending data (N (A)) | |
| 9 | | N/C | |

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

2

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 | g 💭 🗐 x16 ¹ |
|------------------|--------------------------|------------------------|
| H'1~H'7D | Valid PROFIBUS address | |
| H'0 or H'7E~H'FF | Invalid PROFIBUS address | 2 () x16° |

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".

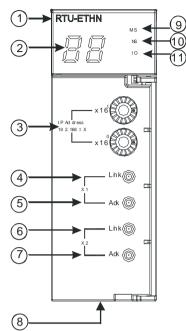
26 (decimal value)=1A (hexadecimal value)=1x16¹+Ax16⁰.

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



| 6 | |
|----|--|
| 72 | |
| | |

| 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) | 12345678 |
| 4 | - | - | |
| 5 | - | - | |
| 6 | RX- | Receiving data (negative pole) | |
| 7 | - | - | |
| 8 | - | - | |

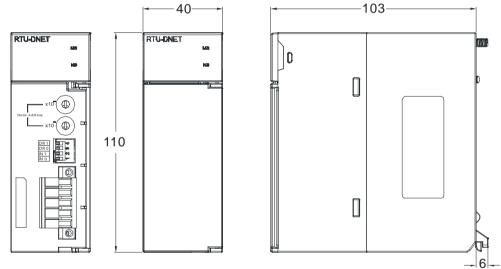
3. Address knobs

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 | . 189 |
|-----------|--|---|
| 00 ~ 0xFD | Valid IP address: 192.168.1.x, x = 1 ~ FD, (1~253) 0x00: set up via EIP Builder | S C S |
| 0xFE | Go to the firmware update mode | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |
| 0xFF | Restore to factory defaults and reboot to have the defaults to take effect. | ×16 ************************************ |

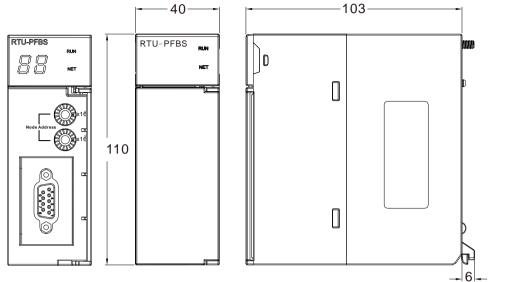
2.9.3 Dimensions

AHRTU-DNET-5A



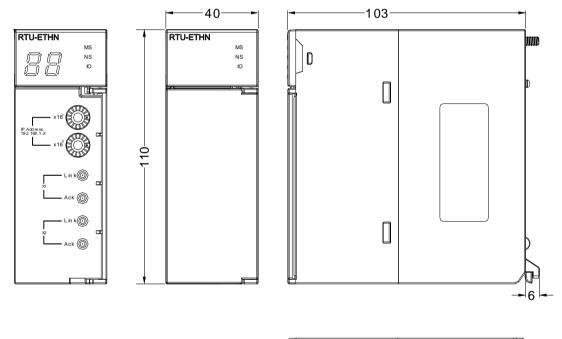
Unit: mm

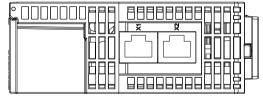
AHRTU-PFBS-5A





AHRTU-ETHN-5A





Unit: mm

2.10 Specifications for Power Supply Modules

2.10.1 General Specifications

AHPS05-5A

| l t a un | ltom Specifications | |
|--------------------|--|--|
| Item | Specifications | |
| Supply voltage | 100~240 V AC (-15%~10%) | |
| Supply voltage | 50/60 Hz±5% | |
| Action | If the input power supply is larger than 85 V AC, the power supply module can | |
| specifications | function normally. | |
| Allowable | | |
| instantaneous | If the instantaneous power failure time is within ten milliseconds, the power | |
| power failure time | supply module keeps running. | |
| Fuse | 4 A/250 V AC | |
| Inrush current | 45 A within 1 millisecond at 115 V AC | |
| | The maximum current is 2.5 A. | |
| 24 V DC output | It is only for a backplane. | |
| Dower protection | The 24 V DC output is equipped with the short circuit protection and the | |
| Power protection | overcurrent protection. | |
| Surge voltage | 1,500 V AC (Primary-secondary), 1,500 V AC (Primary-PE), 500 V AC | |
| withstand level | (Secondary-PE) | |
| In a viation valte | Above 5 MΩ | |
| Insulation voltage | (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 | |
| Ground | connected to the terminals L and N. | |

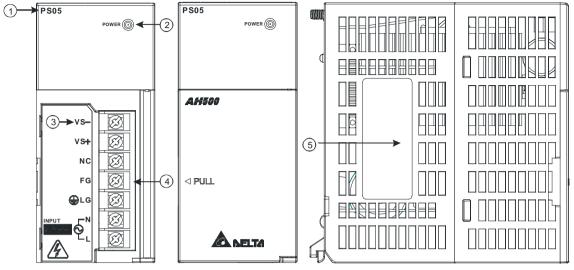
AHPS15-5A

| • • • | | |
|----------------------------------|---|--|
| Item | Specifications | |
| Supply voltage | 24 V DC (-35%, +30%) | |
| Allowable | | |
| instantaneous | 10 milliseconds | |
| power failure time | | |
| Fuse | 6.3 A/250 V AC | |
| Inrush current | 30 A within 100 milliseconds | |
| 24 V DC output | 1.5 A | |
| Maximum output | 36 W | |
| power | 30 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 | |



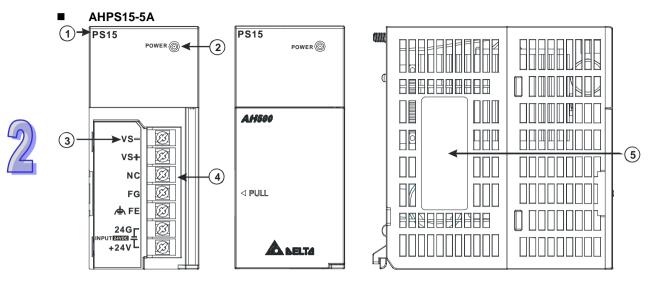
2.10.2 Profiles

AHPS05-5A



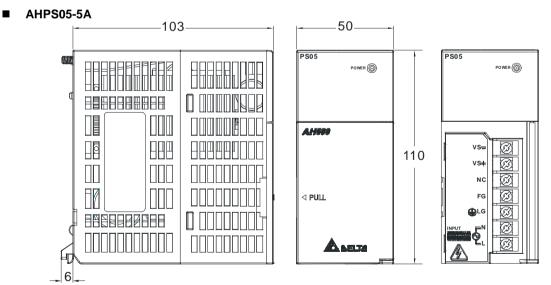
| Number | Name | Description |
|--------|--------------------------------|--|
| 1 | Model name | Model name of the power supply module |
| 2 | POWER LED indicator (green) | Indicating the status of the power supply |
| 3 | Arrangement of the terminals | VS-: It is connected to the negative 24 V DC power 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 |





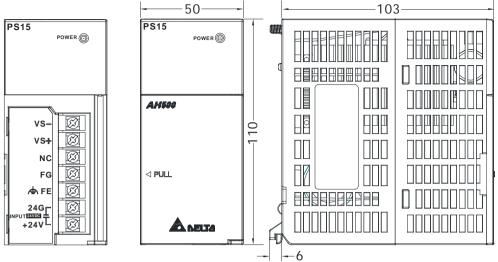
| Number | Name | Description |
|--------|--------------------------------|---|
| 1 | Model name | Model name of the power supply module |
| 2 | POWER LED indicator (green) | Indicating the status of the power supply |
| 3 | Arrangement of the terminals | VS-: It is connected to the negative 24 V DC 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



Unit: mm

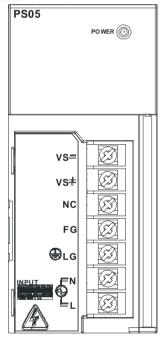
AHPS15-5A



Unit: mm

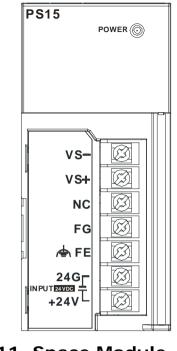
2.10.4 Arrangement of Terminals

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

| Model Item | AHBP04M1-5A | AHBP06M1-5A | AHBP08M1-5A | AHBP12M1-5A |
|-----------------------------------|------------------|---------------------|----------------------|-------------|
| Number of slots | 4 | 6 | 8 | 12 |
| Applicable power supply module | AHPS05-5A and A | HPS15-5A | | |
| Applicable input/output module | The AH500 series | input/output module | es can be installed. | |

• Specifications for extension backplanes

| Model | AHBP06E1-5A | AHBP08E1-5A |
|-------------------------|---|----------------------------------|
| Number of slots | 6 | 8 |
| Applicable power | AHPS05-5A and AHPS15-5A | |
| supply module | ARESUS-SA and ARES IS-SA | |
| Applicable input/output | Digital input/output modules, analog ir | nput/output modules, temperature |
| module | measurement module, AH10SCM-5A | and AH15SCM-5A |

• AHAADP01EF-5A/AHAADP02EF-5A

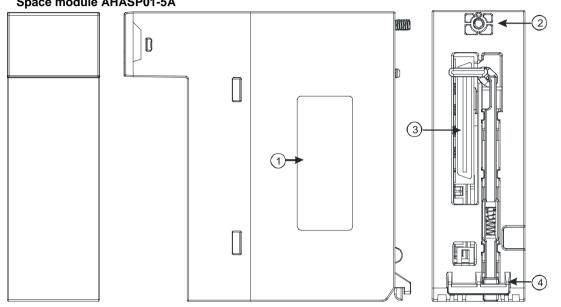
| ltem | Specifications |
|--------------------------------|---|
| Connector type | 155 Mbps 1*9 SC full-duplex optical fiber transceiver |
| Transmission interface | Optical fiber |
| Transmission speed | 100 Mbps |
| Transmission distance | 2 KM |
| Electric energy consumption | 1.5 W |
| Insulation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

Dust cover AHASP01-5A

| ltem | Specifications |
|--------|----------------|
| Weight | 85g |

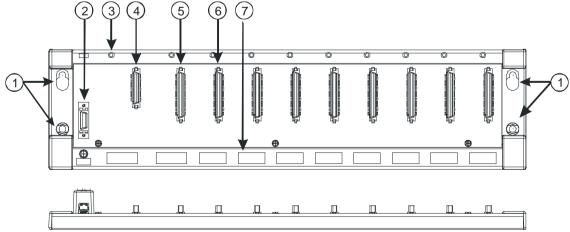
2.11.2 Profiles

Space module AHASP01-5A

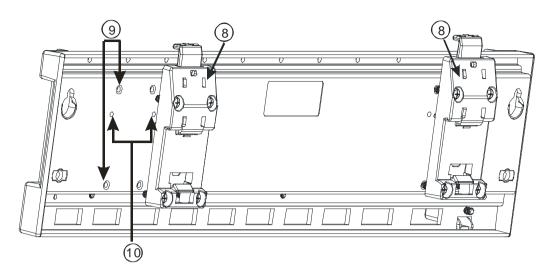


| Number | Name | Description |
|--------|------------|---------------------------------------|
| 1 | Label | Nameplate |
| 2 | Set screw | Fixing the module |
| 3 | Connector | Connecting the module and a backplane |
| 4 | Projection | Fixing the module |

Profile of the main backplane AHBP08M1-5A

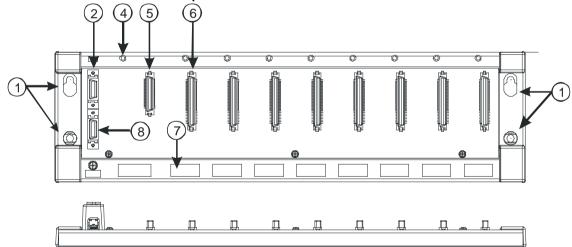




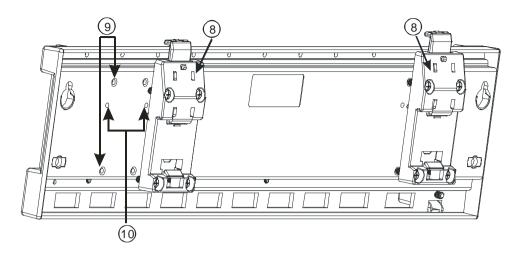


| Number | Name | Description |
|--------|----------------|--|
| 1 | Mounting hole | Fixing the backplane |
| 2 | Extension port | It is connected to an inferior backplane. |
| 3 | Mounting hole | After a module is installed, it is fixed by a screw. |
| 4 | Connector | Connecting the backplane and a 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



2



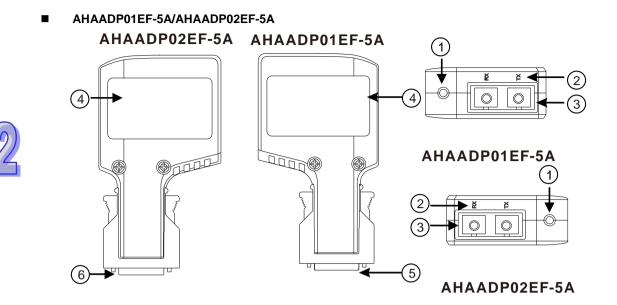
| Number | Name | Description |
|--------|------------------|--|
| 1 | Mounting hole | Fixing the backplane |
| 2 | Extension port 1 | It is connected to a superior backplane. |
| 3 | Extension port 2 | It is connected to an inferior backplane. |
| 4 | Connector | Connecting the backplane and a power 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 |
|--------|-----------|-----------------------|
| | | Connecting backplanes |
| | | 1. AHACAB06-5A |
| 1 | Connector | 2. AHACAB10-5A |
| | | 3. AHACAB15-5A |
| | | 4. AHACAB30-5A |
| 2 | Clip | Fixing the connector |

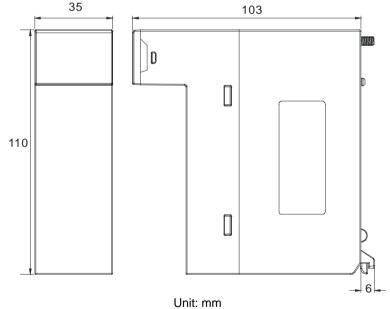




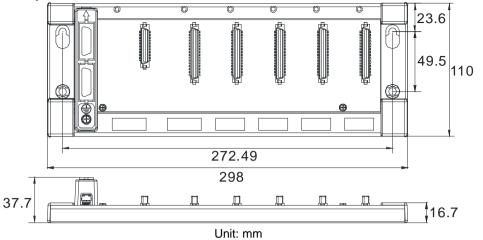
| Number | Name |
|--------|--|
| 1 | Connection/Communication LED indicator |
| 2 | Descritions of the optical fiber ports (TX/RX) |
| 3 | Optical fiber ports |
| 4 | Label |
| 5 | Connector |

2.11.3 Dimensions

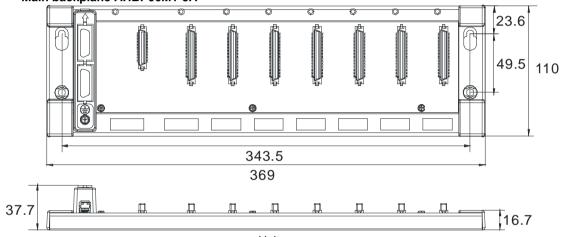
Space module AHASP01-5A



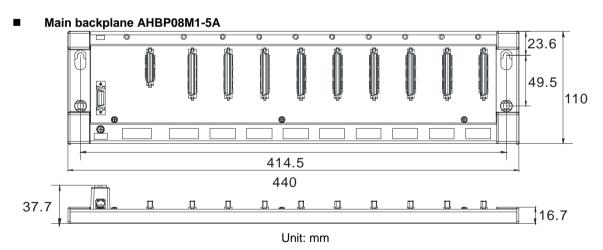
Main backplane AHBP04M1-5A



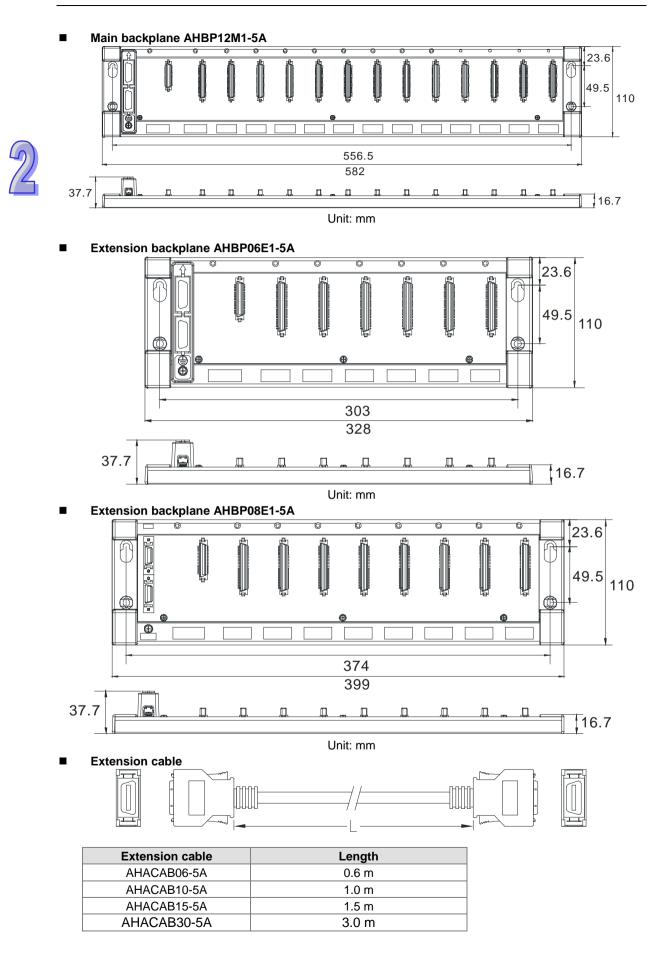


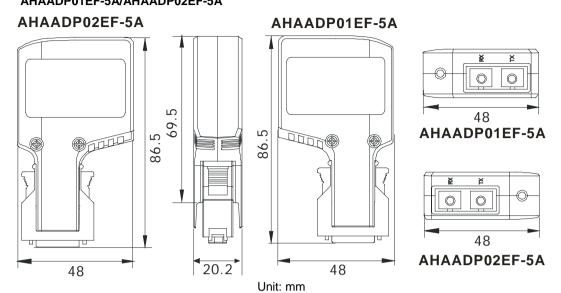












AHAADP01EF-5A/AHAADP02EF-5A