

The Smart Solution for Industrial Machines and System Integration



Automation for a Changing World

# Delta Hot Swappable Mid-range PLC AH Series



TAIWAN  
EXCELLENCE  
2013

[www.deltaww.com](http://www.deltaww.com)



## **AH - Automation System for High-level Applications**

The new generation AH Series PLC provides automation solutions for high-level applications.

The combination of modularized hardware structure, advanced functions, and the highly integrated software provides a system solution for process control applications.

In addition to various function blocks, excellent performance, and an abundant selection of extension modules, the AH Series PLC also provides exceptional system expandability and full redundant solution, greatly reducing the system cost for a broad range of applications.



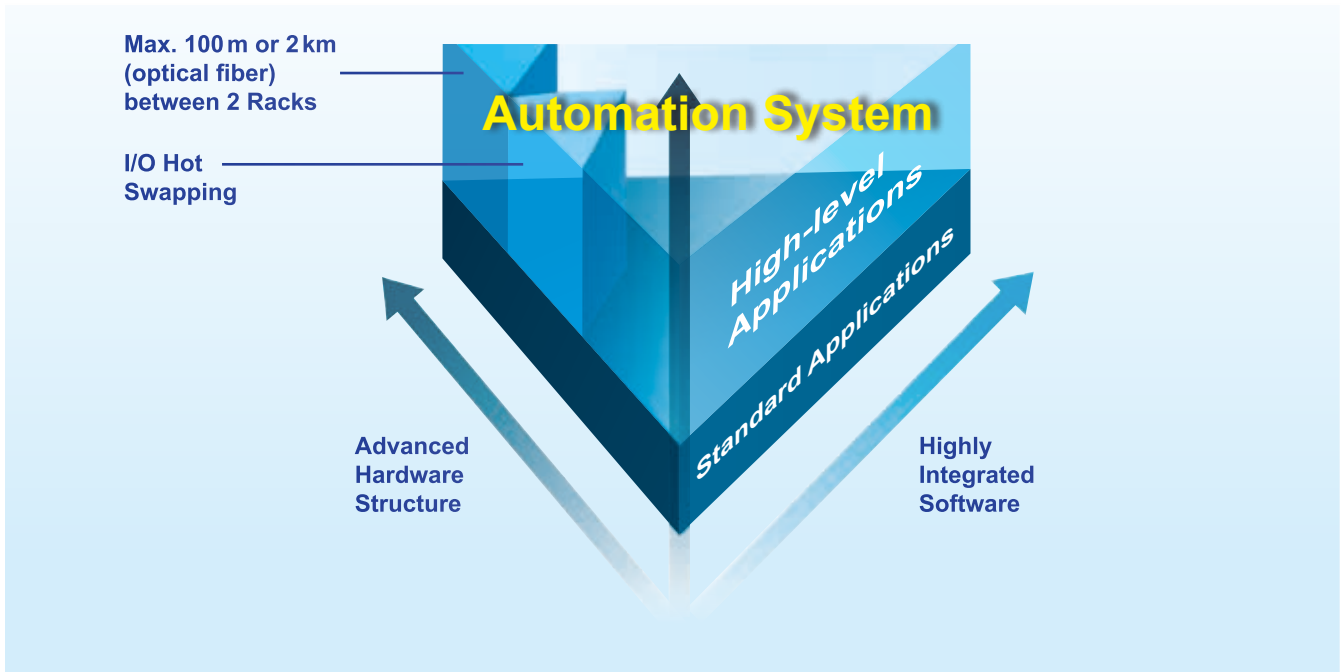


## AH Series

- » Highly integrated software ISPSOft: graphical interface with 5 programming languages
- » Enhanced flexibility: Max. 100m or 2km (optical fiber) between 2 local extension racks
- » Redundant and hot-swapping functions keep the system running for improved maintainability
- » Reliable operations of the supported modules in severe conditions
  - < Operating condition: -20~60°C/5~95% (Non-condensing)
  - < Storage condition: -40~70°C/5~95% (Non-condensing)
- ▶ Utilizes 32-bit processor
- ▶ Max. I/O points:
  - DIO: Max. 4,352 points
  - AIO: Max. 544 channels
  - RIO: >100,000 points
- ▶ Program capacity: Max. 1 M steps (4 MB)  
Data register (D+L): 512 k words
- ▶ Excellent program execution speed:  
LD instruction execution speed: 0.02µs
- ▶ CPU built-in with fully isolated RS-232/422/485, Mini-USB, Ethernet and SDHC card slot
- ▶ Abundant selection of DIO modules, AIO modules, temperature measurement modules, network modules, pulse-train modules and DMCNET/EtherCAT motion control modules

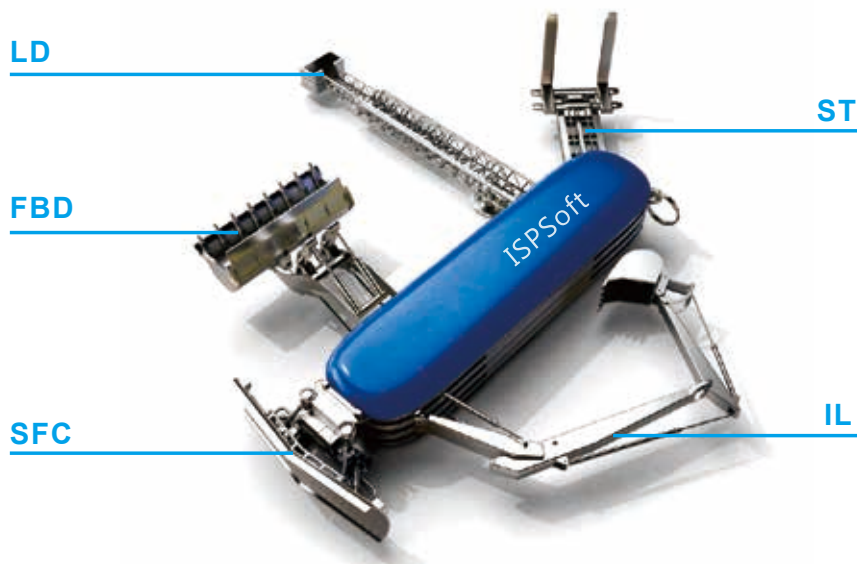


# AH Series PLC – Automation System with Fully Integrated Hardware and Software Interfaces



## Highly Integrated Software – Excellent Accessibility

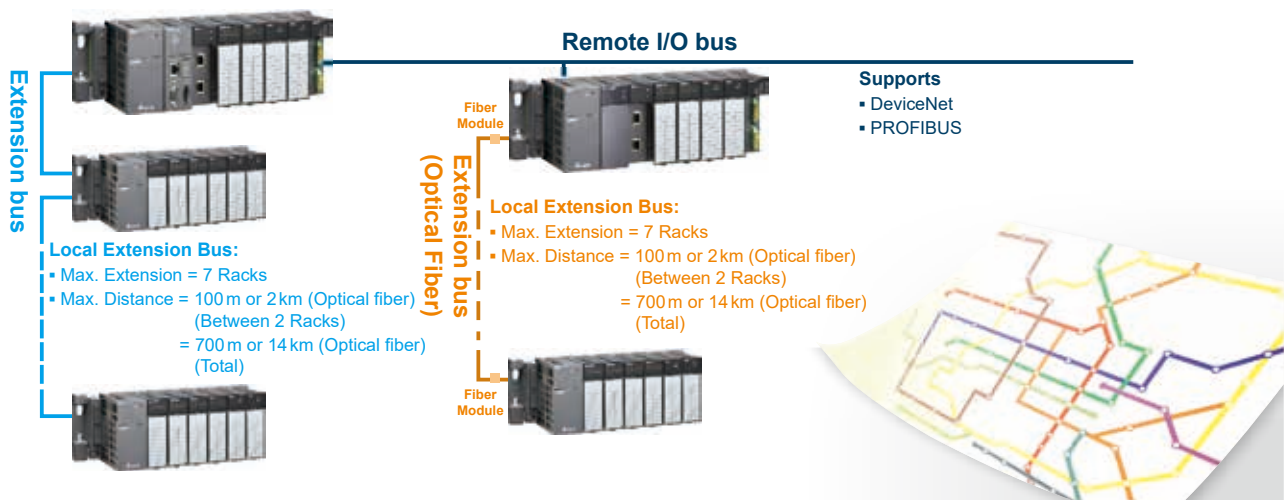
AH PLCs adopt the highly accessible programming software ISPSOft, integrating the main functions that include control process programming, hardware configuration, network configuration, and providing a graphical interface for these functions. In addition, users of ISPSOft can choose their most efficient programming tools from the 5 supported languages: Ladder Diagram (LD), Function Block Diagram (FBD), Sequential Function Chart (SFC), Instruction List (IL) and Structured Text (ST).



## Enhanced Flexibility – Extends the System Freely

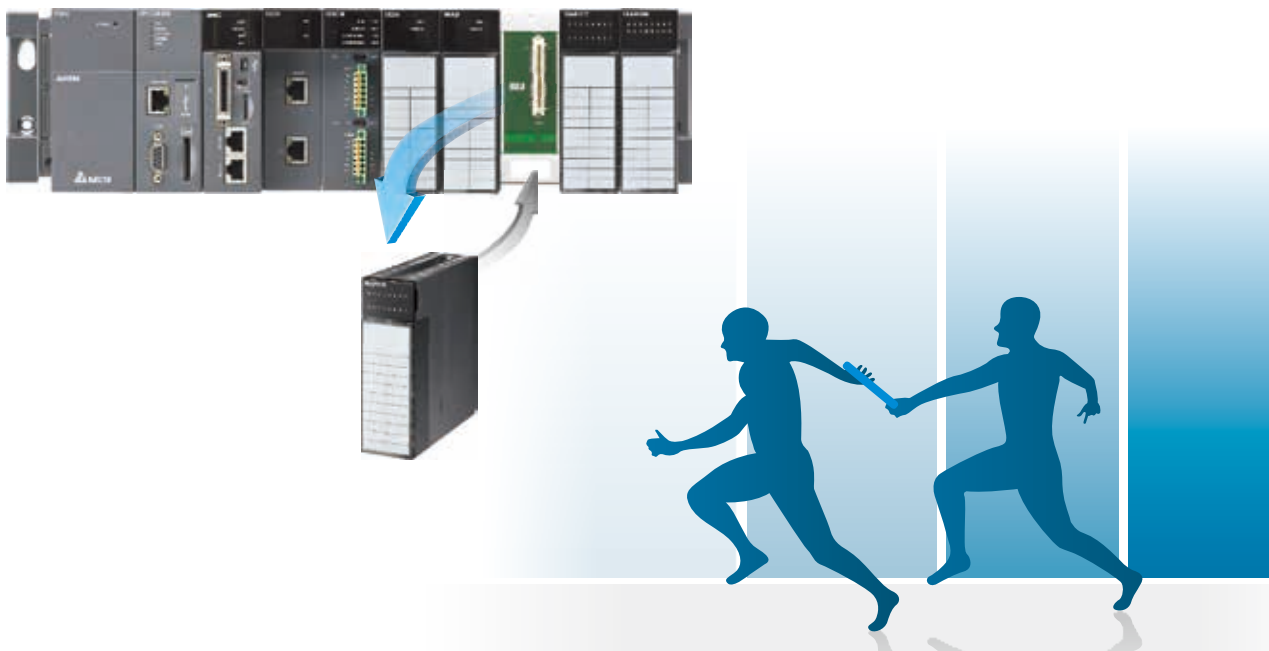
The length of extension cables between each AH local extension rack can reach a maximum of 100m or 2km (optical fiber), greatly enhancing wiring flexibility. In addition, the AH provides modularized backplanes and modules applicable for not only CPU racks but also for remote I/O racks. This feature improves the flexibility of system planning and reduces the additional cost that might be generated by preparing two different types of spare backplanes and modules.

### System Extension Structure



## Improved Maintainability – Keeps the System Running

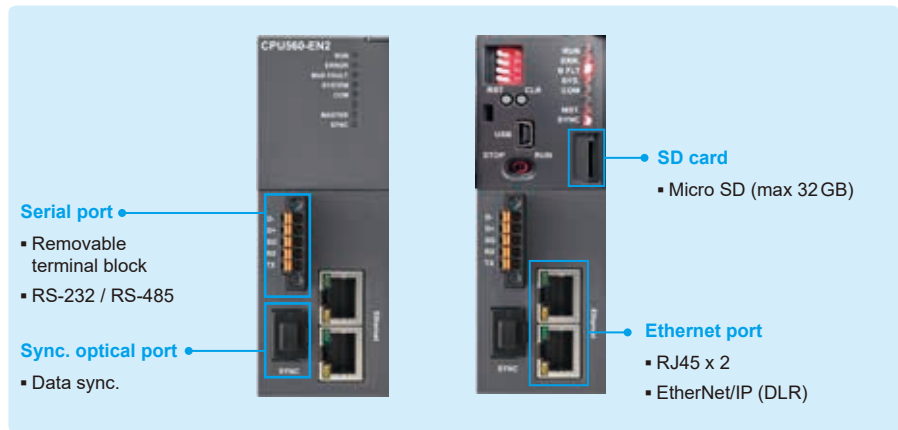
The hot-swap function provided for AIO and DIO modules increases maintainability when I/O modules fail. Users can replace modules without stopping the operation of the CPU module, preventing a possible loss due to a pause in the system's operation.



## Redundant CPU

The redundant CPU of the AH Series adopts a reliable redundancy structure, and integrates synchronous modules, Ethernet ports and serial communication interfaces for a more competitive control solution.

AHCPU560-EN2



## Redundant Backplane

The redundant backplane of the AH Series provides redundant power supply and communication interfaces for a complete control solution.

Redundant main backplane: AHBP04MR1-5A (4-slot)



Redundant expansion backplane: AHBP06ER1-5A (6-slot), AHBP08ER1-5A (8-slot)



# Redundant System

## Full Redundancy Structure

Redundant CPU	Redundant main backplane	Redundant power	Redundant ext. ports	Ring topology
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### Modules

Main backplane	Expansion backplane	RTU rack
<ul style="list-style-type: none"> <li>Ethernet module - AH10EN-5A (V3)</li> <li>Serial module - AH10SCM-5A (V3)</li> </ul>	<ul style="list-style-type: none"> <li>DIO</li> <li>AIO (includes temperature modules)</li> <li>Serial modules - AH10SCM-5A, AH15SCM-5A</li> </ul>	<ul style="list-style-type: none"> <li>DIO</li> <li>AIO (include temperature modules)</li> </ul>

### Tasks

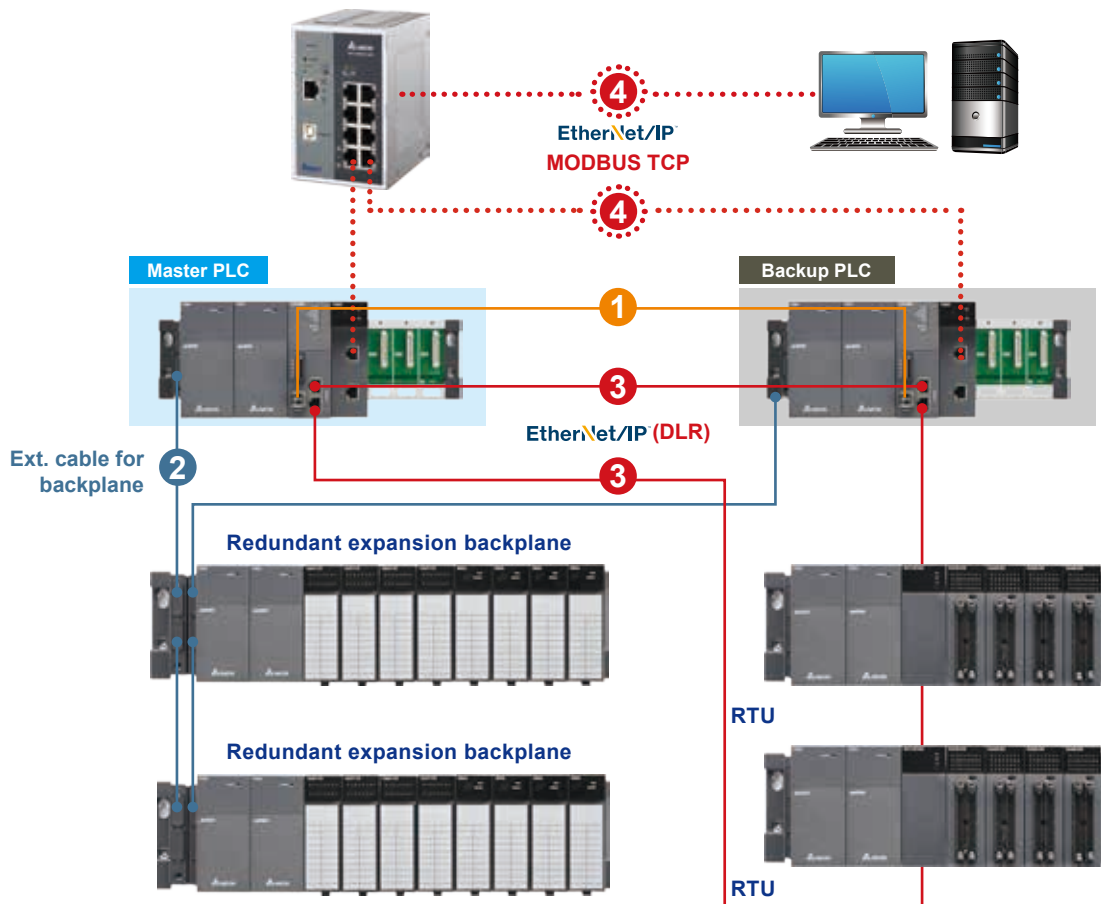
Cyclic	Timer interrupt
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CPU built-in sync. module

CPU switch-over time: 20 ms

RTU nodes to support expansion backplanes

Standard backplanes available (under some conditions)



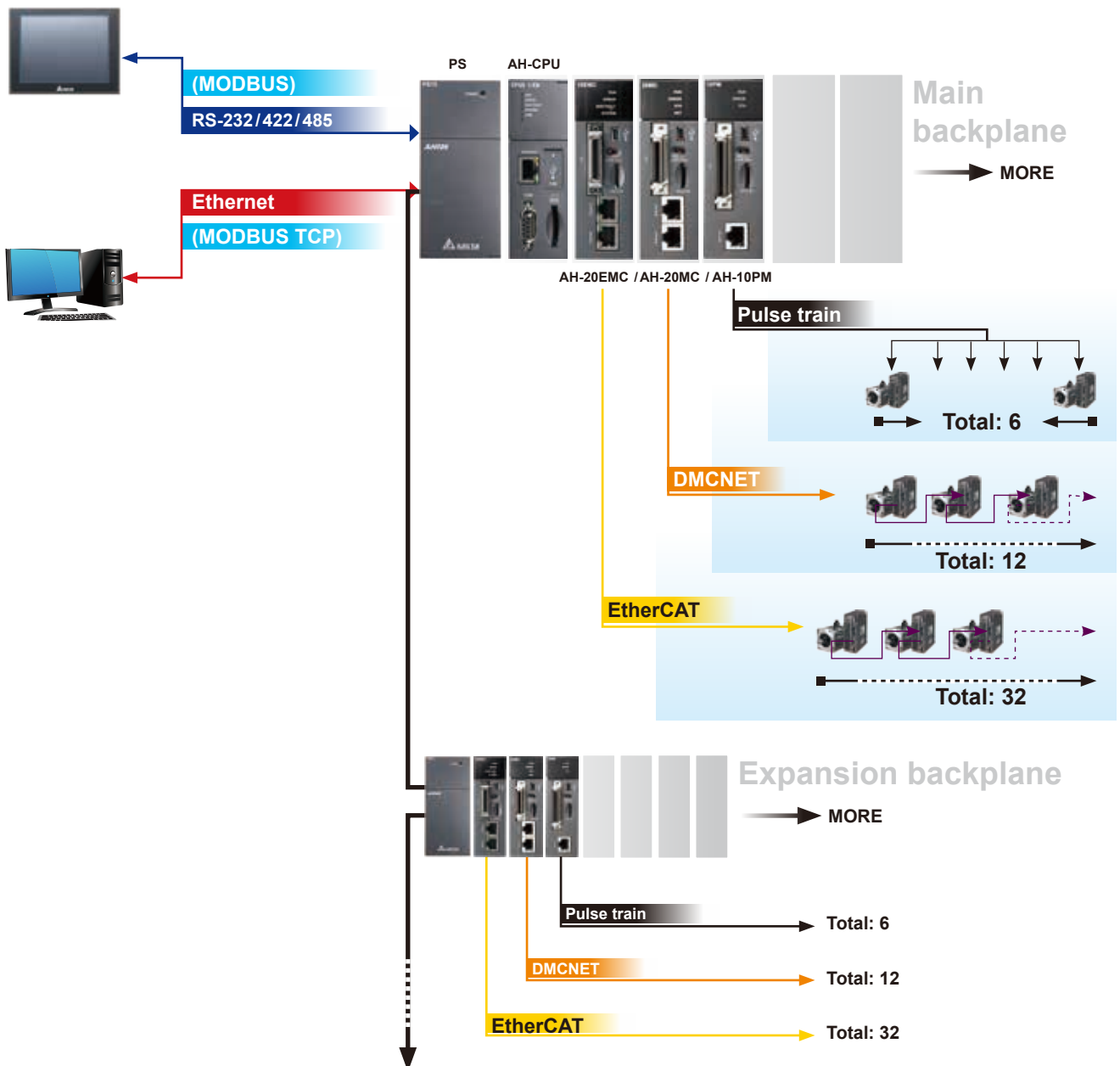
- 1 Sync. optical fiber
- 2 Ext. cable for backplane

- 3 EtherNet/IP ring topology (DLR)
- 4 Star topology EtherNet/IP, MODBUS TCP

# Standard Motion Control System

- ▶ Provides EtherCAT, DMCNET and pulse train solutions for customers.
- ▶ Motion modules can independently take care of both the logic and motion control. Users can write and download the programs to the motion modules.
- ▶ All motion modules support the standard motion control system.
- ▶ All motion modules can be installed on the local backplanes.
- ▶ Motion control functions:
  - » Performance:
    - Pulse train module: Max. 1 MHz output
    - DMCNET module: Min. synchronization time at 12 axes is 1 ms
    - EtherCAT module: Min. synchronization time at 8/16/32 axes is 0.5/1/2 ms
  - » Supports UD/PD/AB/4AB input modes
  - » Supports MPD inputs/E-Cam/G-code/2~6 axes linear interpolation/2 axes arc interpolation/3 axes helical interpolation

Note: The EtherCAT motion modules (AHxxEMC-5A) do not yet have support installed on the I/O slots.

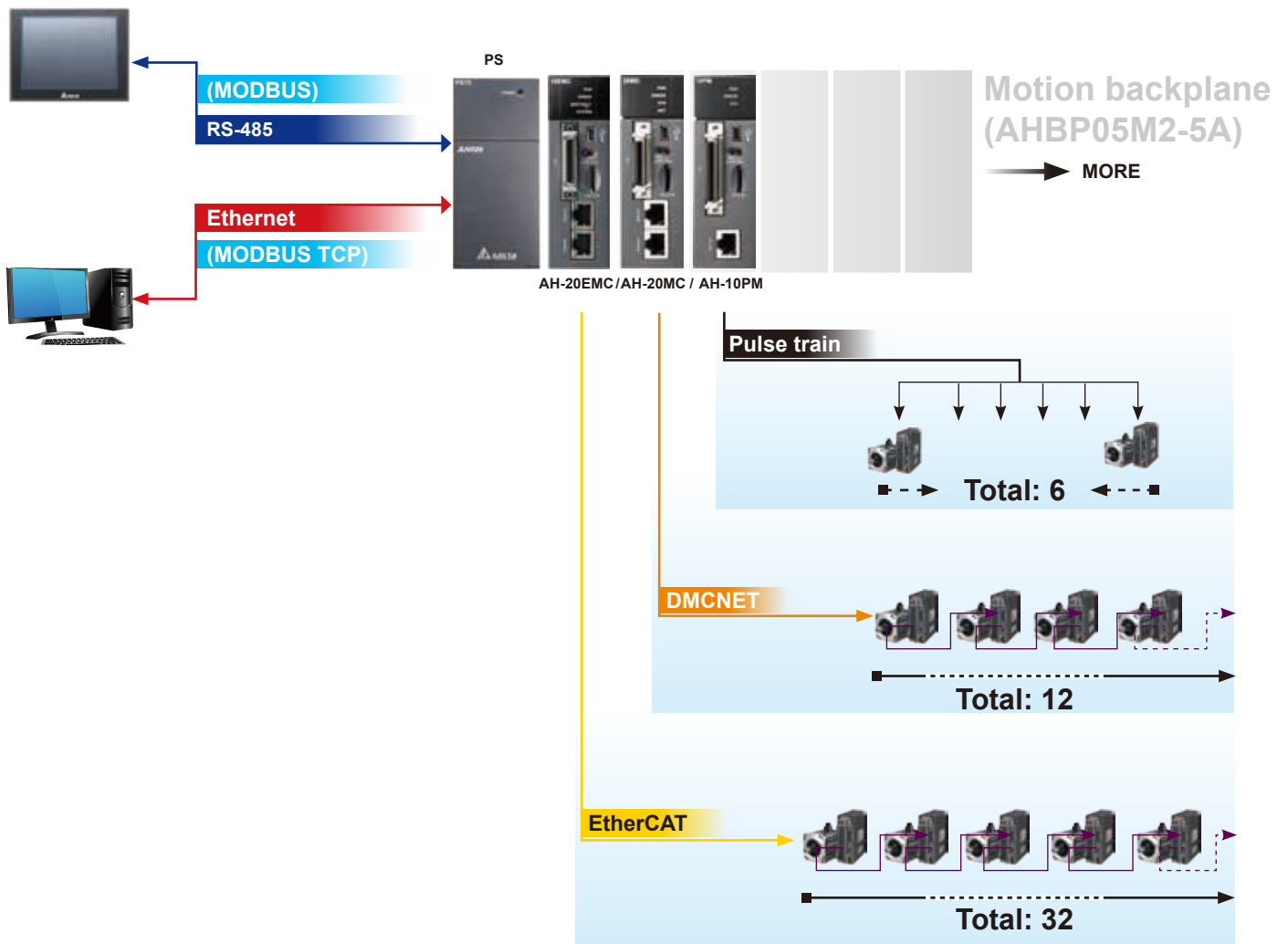




# Compact Motion Control System

- ▶ Provides EtherCAT, DMCNET and pulse train solutions for customers.
- ▶ AHxxEMC-5A motion controller can be installed on the CPU slot of the specific motion backplane and works as a CPU module.
- ▶ Compact motion control system does not support the expansion backplane.
- ▶ Motion modules can be installed on the I/O slot of the motion backplane.
- ▶ Motion control functions:
  - » Performance:
    - Pulse train module: Max. 1 MHz output
    - DMCNET module: Min. synchronization time at 12 axes is 1 ms
    - EtherCAT module: Min. synchronization time at 8/16/32 axes is 0.5/1/2 ms
  - » Supports UD/PD/AB/4AB input modes
  - » Supports MPD inputs/E-Cam/G-code/2~6 axes linear interpolation/2 axes arc interpolation/3 axes helical interpolation

Note: The EtherCAT motion modules (AHxxEMC-5A) do not yet have support installed on the I/O slots.



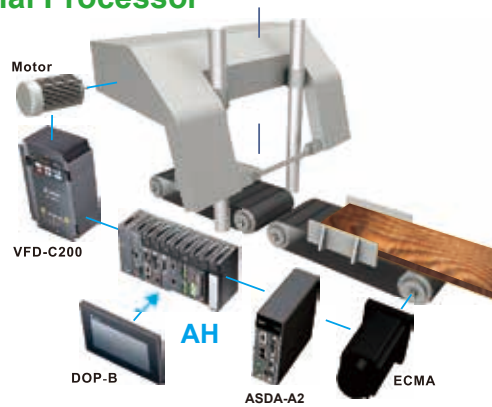


# Application Examples

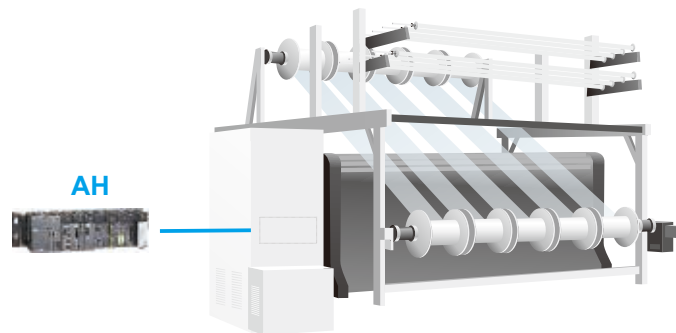
## Large Scale Industrial Machines

The features of the AH can easily fulfill the system requirements of large scale industrial machines. By utilizing its unique local extension capability with versatile combinations of I/O modules, the AH can simplify the complex remote I/O system structure in large scale industrial machines with a local I/O system consisting of a single CPU rack and local extension racks, maintaining a high execution speed and lowering the wiring cost.

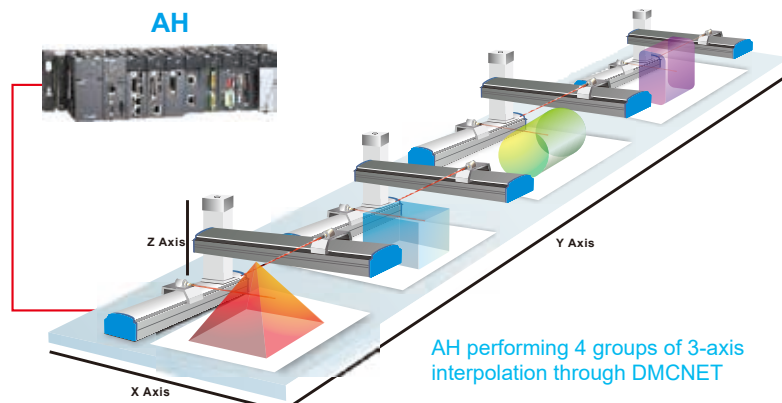
## Building Material Processor



## Warp Knitting Machine



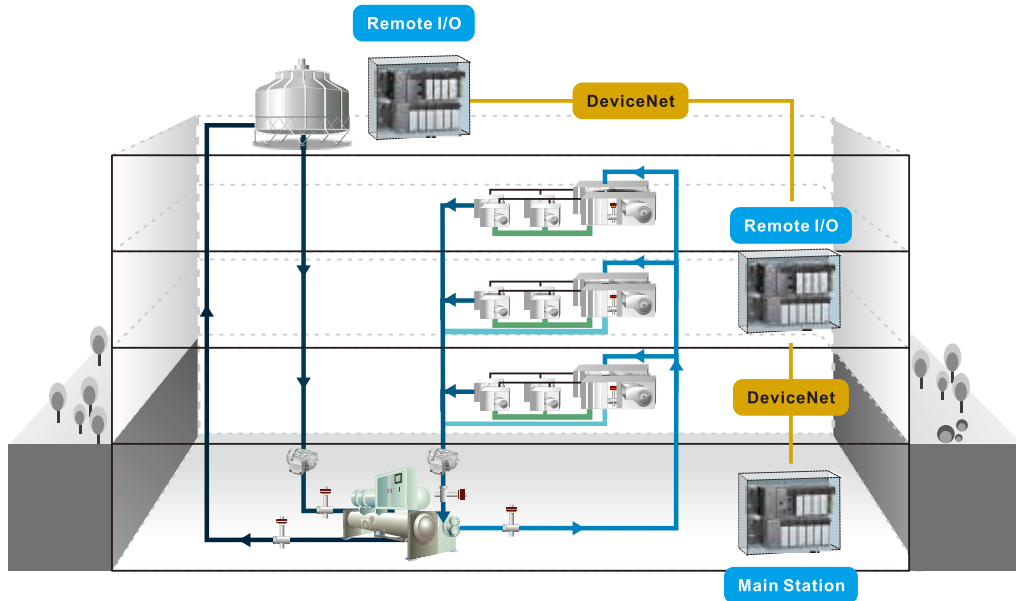
The AH also supports excellent motion control functions including 3-axis linear interpolation, 2-axis arc interpolation, and 3-axis helical interpolation. In addition, the AH is capable of controlling up to 12 axes or 4 groups of 3-axis interpolation synchronously through Delta's high speed motion control network DMCNET.



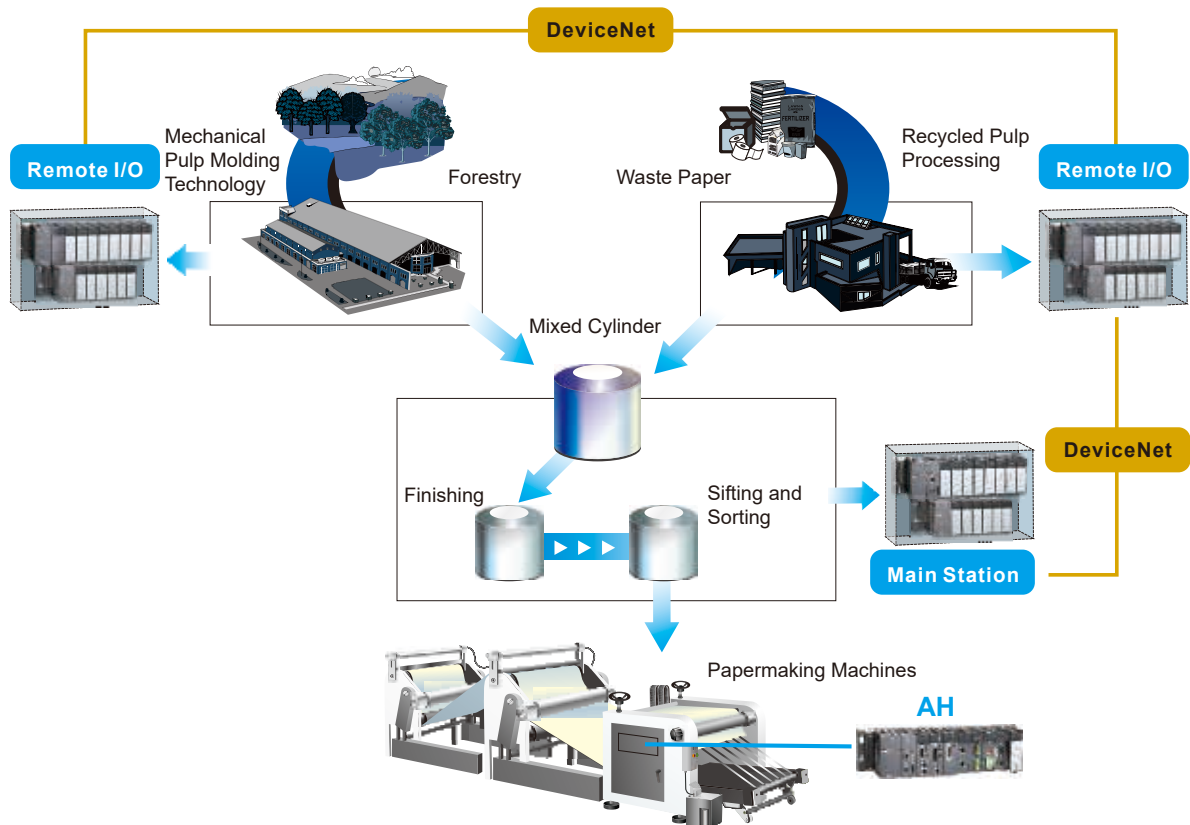
## System Applications

The AH is a modular system controller designed for almost all kinds of high-level automation tasks. The abundant selection of I/O modules and the flexible system structure provide the best solutions for all types of system integration requirements. Through the remote I/O expandability, you can build up the AH main station as a central control system and allocate the remote I/O systems on different floors for HVAC applications, or in different processing stations for the paper-making industry. The AH can not only fulfill the application requirements of industrial machines or devices, but it can also provide total solutions for automation systems.

### HVAC

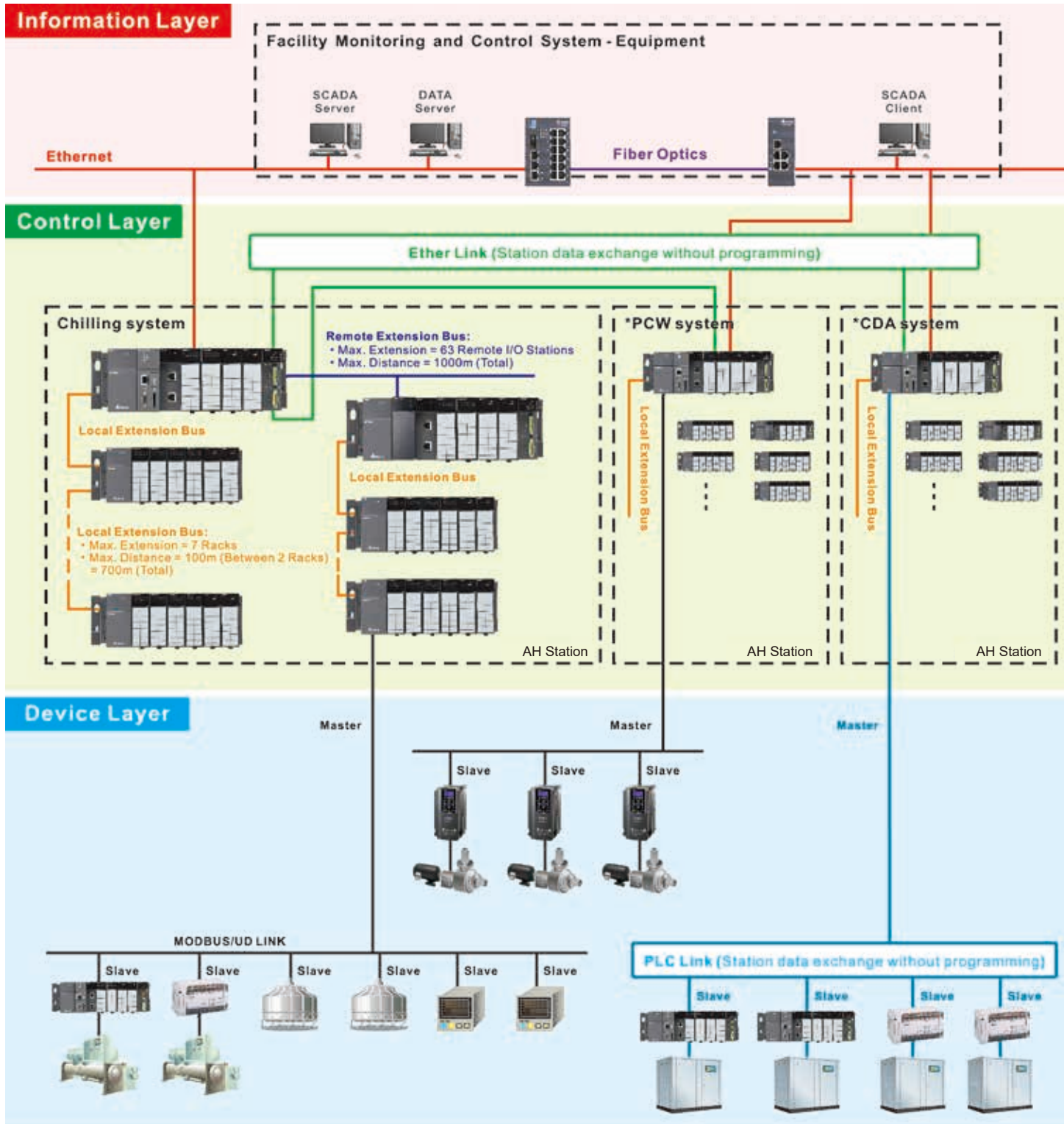


### Papermaking Industries



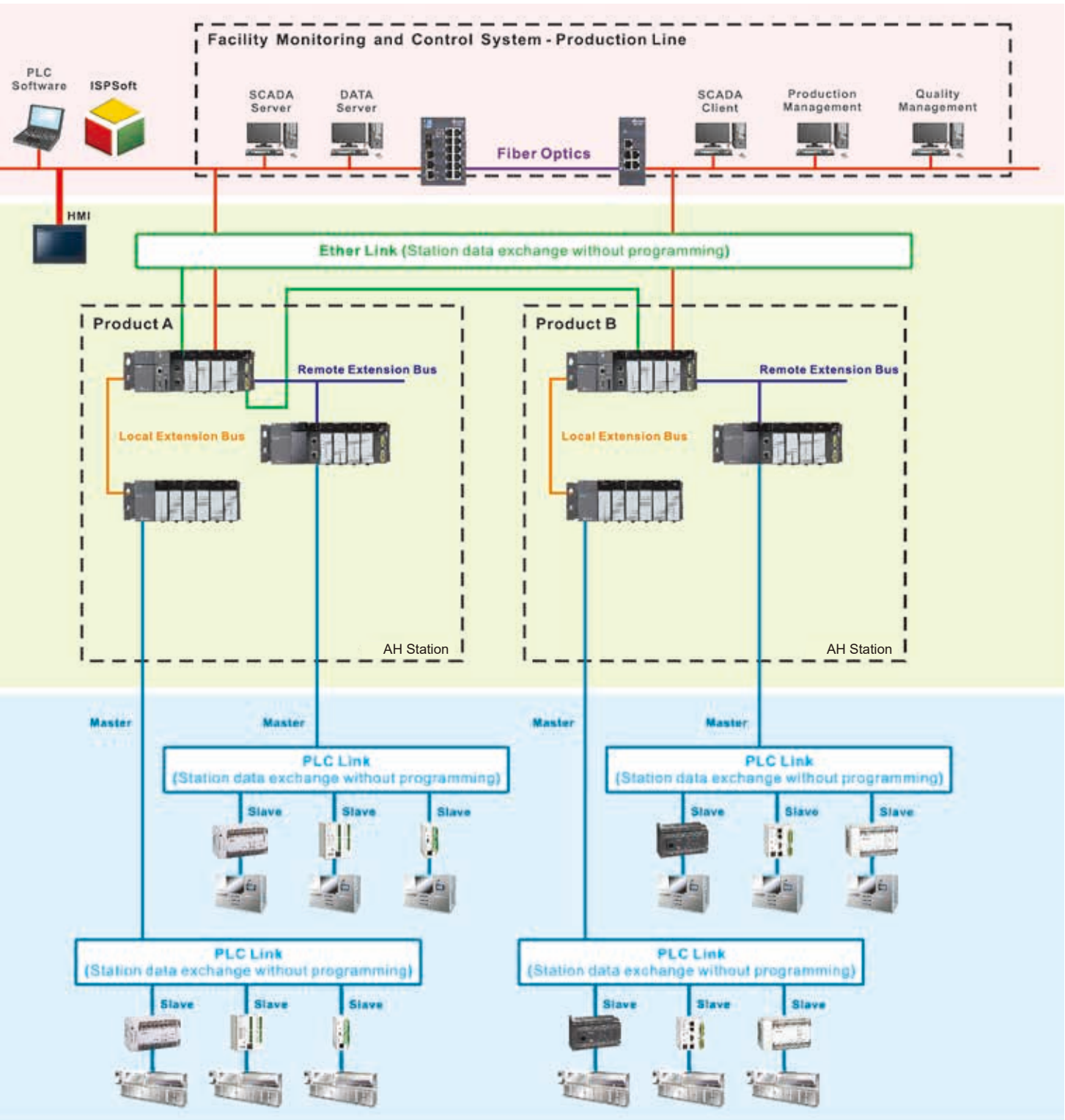
# AH System Structure – Facility Monitoring and Control System

The system configuration of the AH is well demonstrated by the Facility Monitoring and Control System (FMCS). The AH in the control layer connects multiple facility systems and product processing systems and performs data exchange without programming through Delta's convenient PLC Link and Ether Link. PLC Link can be applied for data exchange between masters and slaves, and Ether Link can be applied for data exchange between AH master stations. The smart communication feature can save you time spent in programming.



\* [Note] PCW system: Process Cooling Water System ; CDA system: Clean Dry Air System

In addition to AH PLCs, Delta's industrial automation solution includes human machine interfaces (HMI), DVS series industrial Ethernet switches, DVP series PLCs, AC motor drives, AC servo drives and temperature controllers. You can find the best solution for your industry from our product lines across the device layer, control layer and information layer.

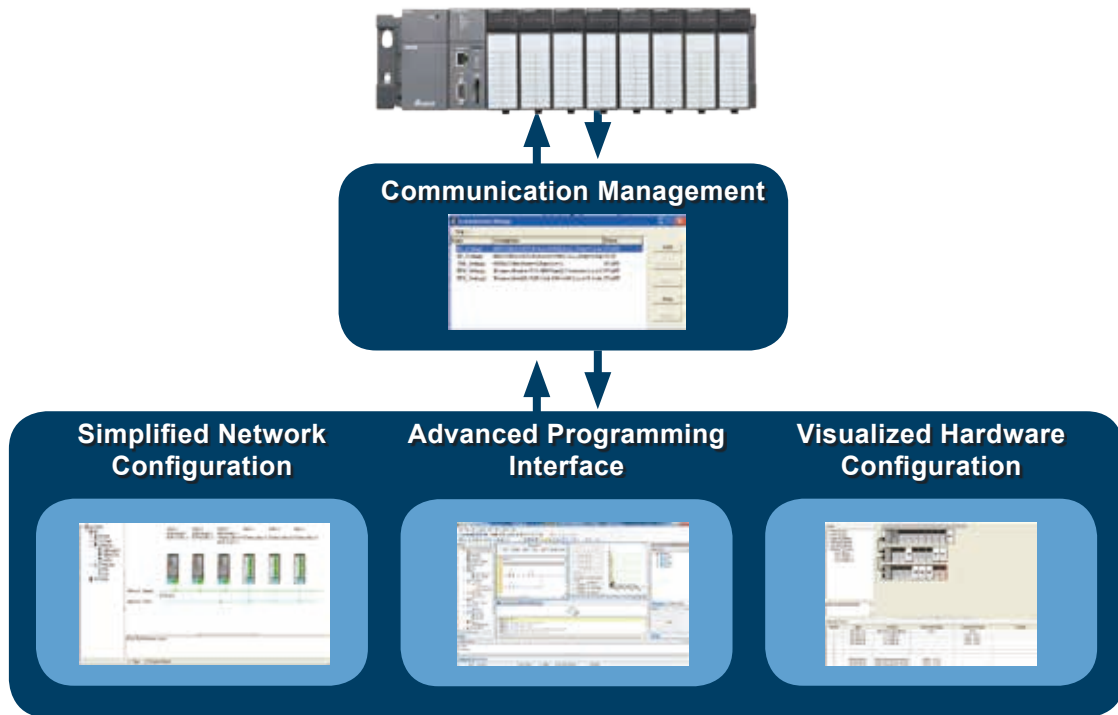


# ISPSOft V3.0

## Highly Accessible Programming Software

### Fully Integrated Interface

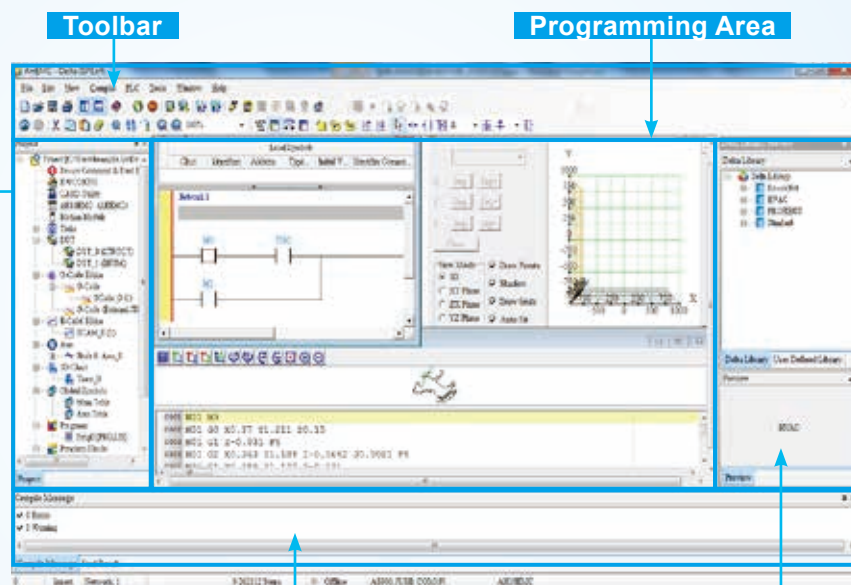
Advanced Programming Interface + Visualized Hardware Configuration + Simplified Network Configuration + Data Tracer & Logger + Motion programming



### Advanced Programming Interface

#### Project Management Window

- **New Functions:** Network configuration, hardware configuration and PLC card.
- Supports 5 programming languages (LD/FBD/SFC/IL/ST)
- **Function Blocks:** Symbols can be introduced in call-by-value or call-by-reference types. Function blocks can be called in function block for up to 32 levels.
- **Monitor Table:** It can be stored and managed separately. Multiple monitor tables can be stored in a single project.
- **User Library:** Users can design frequently used instructions for specific applications in different industries.
- **Task:** Supports cyclic, I/O interrupt, timer interrupt, external interrupt, and more. Software will provide usable tasks for different CPUs.



#### Message Window

#### Library Management

## Visualized Hardware Configuration

**Module Selection**

**Module Description**

**Toolbar**

- System hardware configuration can be monitored in On-Line mode
- Hardware configuration can be displayed by Scan function

**Hardware Configuration Area**

- Operations of Cut / Copy / Paste / Delete are available for modules and racks
- Parameters of each module can be directly configured

**Rack Information**

- I/O device range can be specified by the user

Slot No.	Module	Description	Input Device Range	Output Device Range	Comments
0	AP0000-0A	All Power Supply Module	None	None	
1	AP0001-0A	All Power CPU Module	None	None	
2	AP0002-0A	12 x DI, 12 x DO	000 - 001F	000 - 001F	
3	AP0003-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
4	AP0004-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
5	AP0005-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
6	AP0006-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
7	AP0007-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
8	AP0008-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
9	AP0009-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
10	AP0010-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
11	AP0011-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
12	AP0012-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	
13	AP0013-0A	12 x DI, 12 x DO, 12 x AI, 12 x AO	000 - 001F	000 - 001F	

## Simplified Network Configuration

**Network Device Selection**

**Ether Link**

**PLC Link**

**Toolbar**

**Network Configuration Area**

- Master device settings
- Ether Link editing function
- PLC Link editing function

**Network Information**

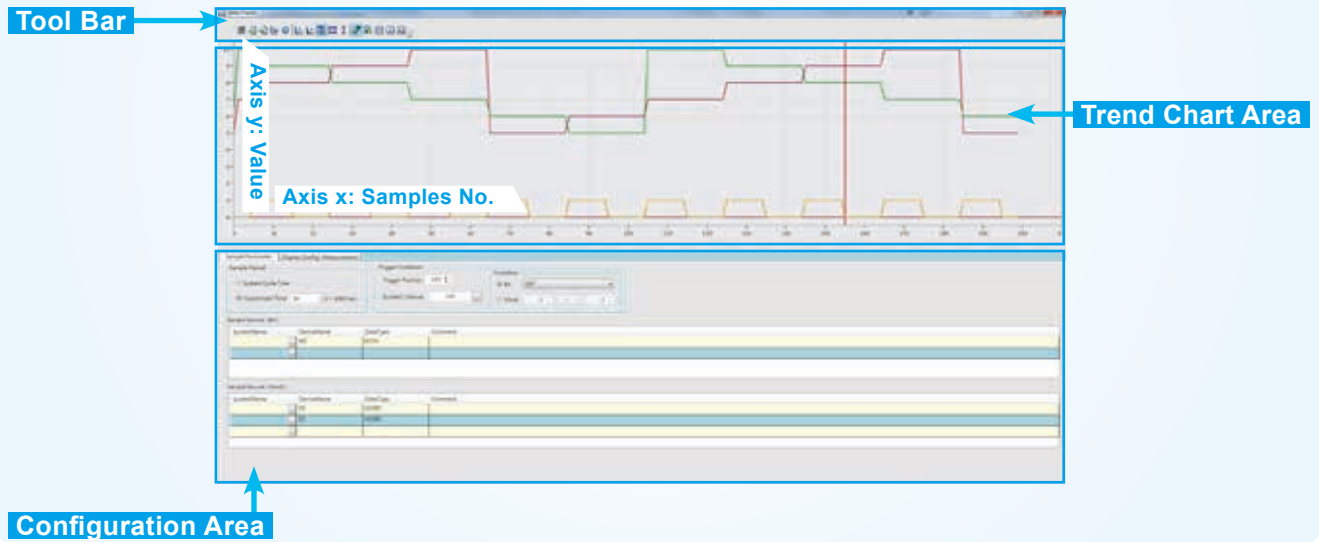
## Data Tracer & Logger

### Data Tracer

Provides high speed data log ability and the interval could be 1 CPU scan. Users can easily analyze the program logic with this function.

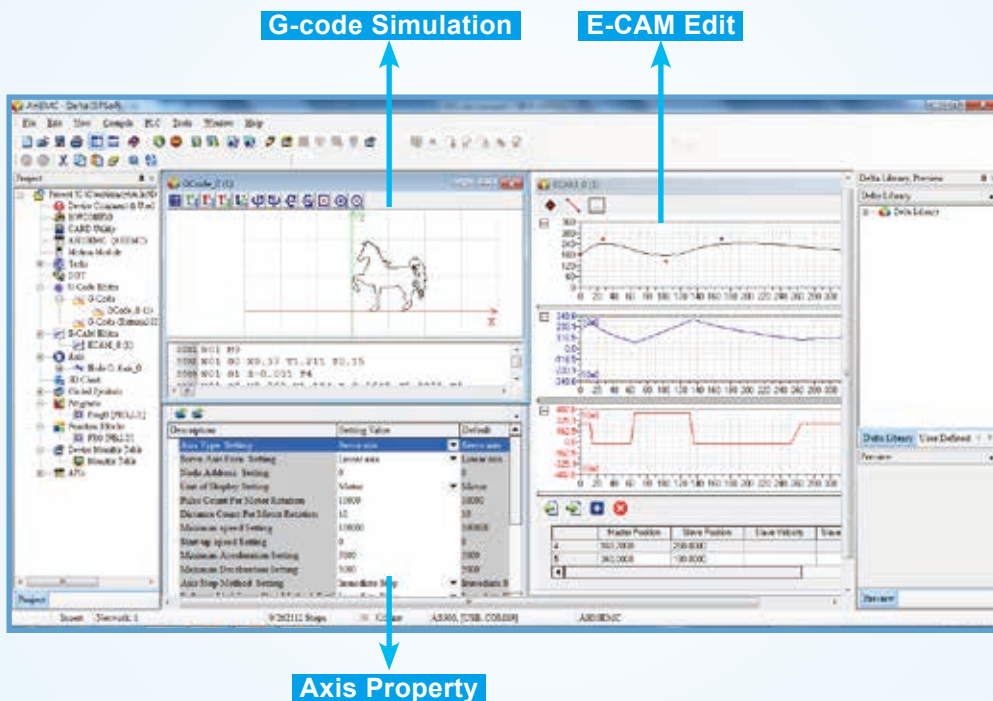
### Data Logger

Provides big data log ability and adjustable intervals. Users can log critical system data and then analyze the system operation status.



## Integrated Motion Programming

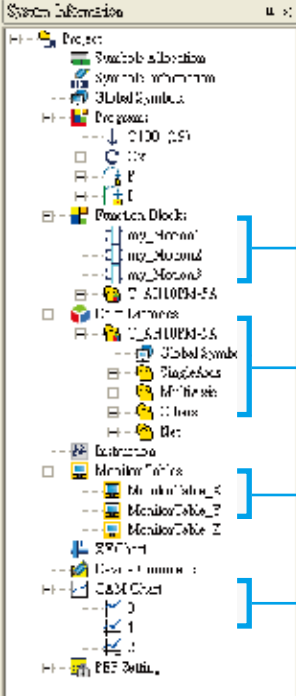
ISPSOft V3 integrates the logic and motion program editors into one software





# PMSoft V2.0

This programming software is for G-code editing, motion trajectory simulation, positioning route instruction and electronic cam establishment.



**Variable Declaration**

Separate from the program. The corresponding physical I/O point of the variable is defined only after the program is compiled. Users do not need to modify the program.

**Function Block**

A complicated project can be divided into many function blocks. A function block can be used repeatedly. The import/export function makes the programming more convenient.

**Function Block for Motion Control**

Provides function block features specifically for motion control, making programming more convenient

**Convenient Monitor Table Management**

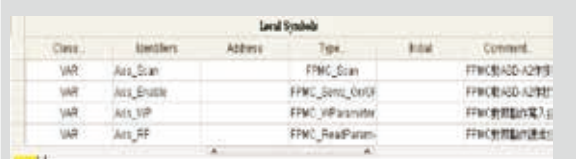

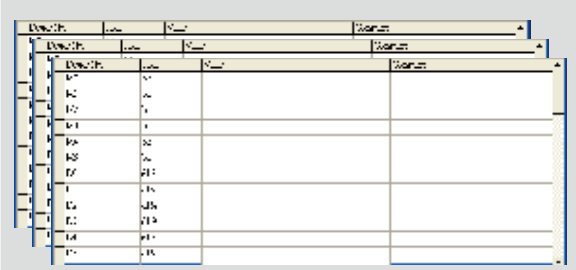

Users can save and manage monitor tables independently according to their needs.

**Electronic Cam**

Electronic cam editing

**CFC Editor**

Supports CFC programming language

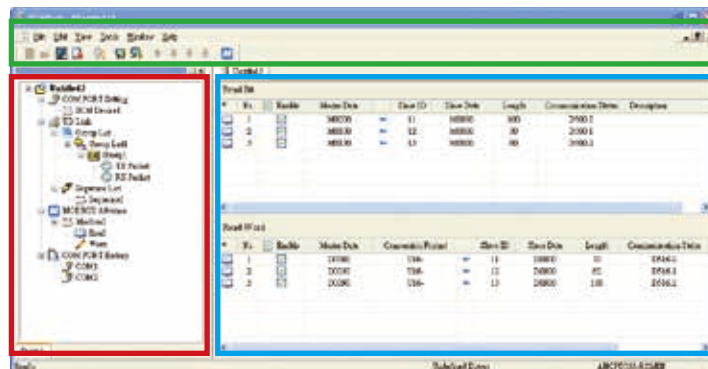





# SCMSoft V1.0 Communication Editing Software

Provides SCM module with automatic data exchange setup function

## Project Management Interface

- Supports user defined protocol (UD Link)
- Supports MODBUS protocol
- Supports data monitoring for communication ports



## Toolbar

- Upload/Download setup files
- Supports wizards

## Editing Area

- Data exchange setup
- Status display



# Model Name Explanation

## AH CPU

### AHCPU500-RS2

AH	CPU	5	0	0	-	RS2
Series	Classification	Model	Function	Version		Type
	CPU		0: No expansion rack 1: 1 expansion rack 2: 3 expansion racks 3: 7 expansion racks 6: Redundant CPU			RS2: 2 COM ports EN: 1 COM & 1 Ethernet ports EN2: 1 COM & 2 Ethernet ports

## AH RTU Module

### AHRTU-DNET-5A

AH	RTU	-	DNET	-	5A
Series	Classification		Function		Type
	Remote terminal unit		DNET: DeviceNet PFBS: PROFIBUS ETHN: EtherNet/IP		

## AH Digital I/O Module

### AH16AM10N-5A

AH	16	AM	1	0	N	-	5A
Series	I/O points	Classification	Function	Function	Function		Type
	16: 16 points 32: 32 points 64: 64 points	AM: Digital input AN: Digital output AP: Digital input/output AR: Digital input with interrupt	0: No input 1: DC input (24 V) 3: AC input (120~240 V)	0: No output 1: 0.5A transistor/TRIAC output or 2A relay output 2: 0.1A transistor output	N: No output R: Relay output T: NPN output P: PNP output S: TRIAC output		5A: Removable terminal 5B: DB37 connector 5C: MIL

## AH Temperature Module

### AH04PT-5A

AH	04	PT	-	5A
Series	I/O channels	Classification		Type
	04: 4-channel 08: 8-channel	PT: Platinum resistance thermometer TC: Thermocouple PTG: Platinum resistance thermometer (channel isolation)		

## AH Motion Module

### AH02HC-5A

AH	02	HC	-	5A
Series	Function	Classification		Type
	02: 2-channel 04: 4-channel 05: Simple type (PM) 10: Standard type (PM) 15: Advanced type (PM) 20: DMCNET 08E: EtherCAT (8-axis) 10E: EtherCAT (16-axis) 20E: EtherCAT (32-axis)	HC: High speed counter PM: Motion controller (Pulse train) MC: Motion controller (Network)		

## AH Power Supply Module

### AHPS05-5A

AH	PS	05	-	5A
Series	Classification	Function		Type
	Power supply	05: AC input (100~240 V) 15: DC input (24 V)		

## AH Analog I/O Module

### AH04AD-5A

AH	04	AD	-	5A
Series	I/O Channels	Classification		Type
	04: 4-channel 06: 6-channel 08: 8-channel	AD: Analog input DA: Analog output XA: Analog input/output		5A: Voltage/Current 5B: Voltage 5C: Current

## AH Network Module

### AH10EN-5A

AH	10	EN	-	5A
Series	Function	Classification		Type
	10: Basic 15: Advanced	EN: Ethernet SCM: Serial communication DNET: DeviceNet PFBM: PROFIBUS master PFBS: PROFIBUS slave COPM: CANopen		

## AH Backplane

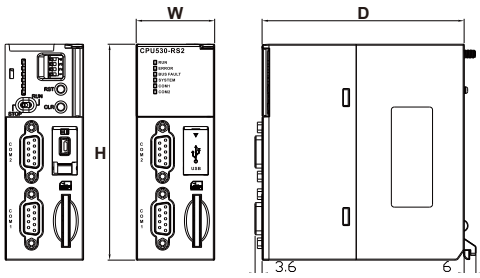
### AHBP04M1-5A

AH	BP	04	M1	-	5A
Series	Classification	Function	Function		Type
	Backplane	03: 3-slot 04: 4-slot 05: 5-slot 06: 6-slot 07: 7-slot 08: 8-slot 12: 12-slot	M1: Main backplane M2: Main backplane for motion E1: Expansion backplane MR1: Redundant main backplane ER1: Redundant expansion backplane		

# Dimensions Dimensions are in mm

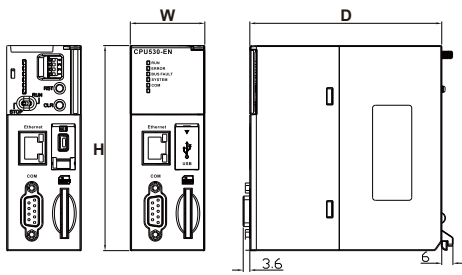
## CPU Modules

Model Name	H	W	D
AHCPU500-RS2	110	40	103
AHCPU510-RS2	110	40	103
AHCPU511-RS2	110	40	103
AHCPU520-RS2	110	40	103
AHCPU530-RS2	110	40	103



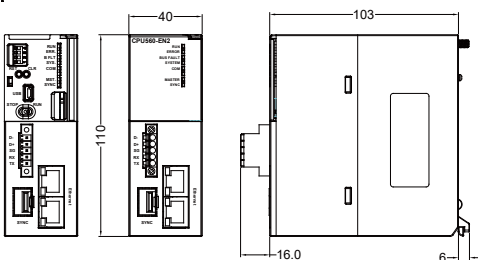
## CPU Modules

Model Name	H	W	D
AHCPU500-EN	110	40	103
AHCPU510-EN	110	40	103
AHCPU511-EN	110	40	103
AHCPU520-EN	110	40	103
AHCPU521-EN	110	40	103
AHCPU530-EN	110	40	103
AHCPU531-EN	110	40	103



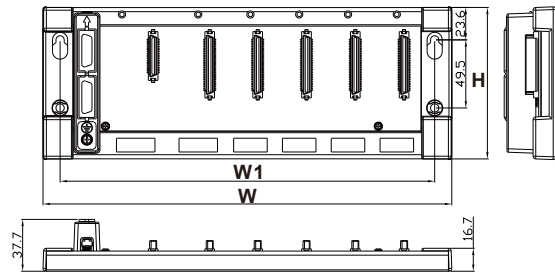
## CPU Modules

Model Name	H	W	D
<b>New</b> AHCPU560-EN2	110	40	103



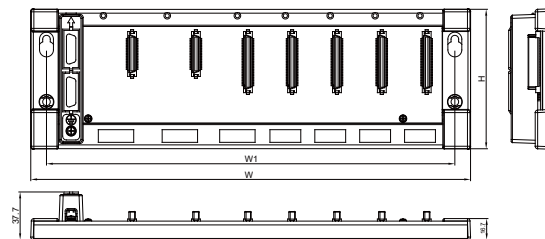
## Backplanes

Model Name	H	W	W1
AHBP04M1-5A	110	298	272.5
AHBP06M1-5A	110	369	343.5
AHBP08M1-5A	110	440	414.5
AHBP12M1-5A	110	582	556.5
AHBP03M2-5A	110	257	232.4
AHBP05M2-5A	110	328	303
AHBP07M2-5A	110	399	374
AHBP06E1-5A	110	328	303
AHBP08E1-5A	110	399	374



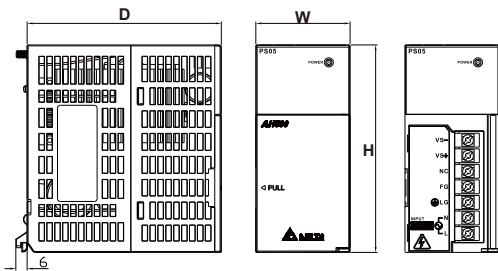
## Backplanes

Model Name	H	W	W1
<b>New</b> AHBP04MR1-5A	110	348	323
<b>New</b> AHBP06ER1-5A	110	398	373
<b>New</b> AHBP08ER1-5A	110	469	444



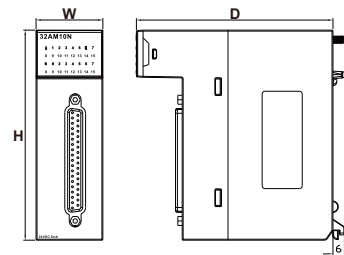
## Power Supply Modules

Model Name	H	W	D
AHPS05-5A	110	50	103
AHPS15-5A	110	50	103



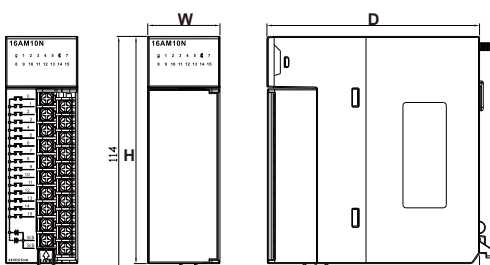
## 32-point Digital I/O Modules

Model Name	H	W	D
AH32AM10N-5B	110	35	103
AH32AN02T-5B	110	35	103
AH32AN02P-5B	110	35	103



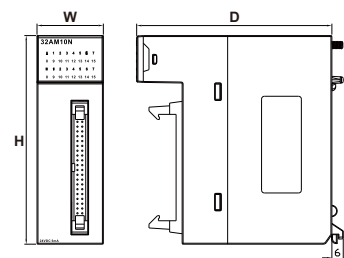
## 16-point Digital I/O Modules

Model Name	H	W	D
AH16AM10N-5A	110	35	103
AH16AM30N-5A	110	35	103
AH16AN01R-5A	110	35	103
AH16AN01T-5A	110	35	103
AH16AN01P-5A	110	35	103
AH16AN01S-5A	110	35	103
AH16AP11R-5A	110	35	103
AH16AP11T-5A	110	35	103
AH16AP11P-5A	110	35	103
AH16AR10N-5A	110	35	103



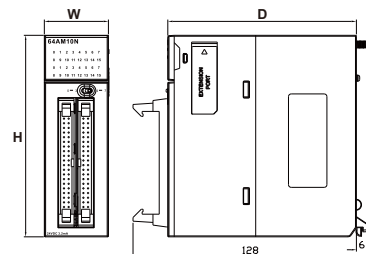
## 32-point Digital I/O Modules

Model Name	H	W	D
AH32AM10N-5C	110	35	103
AH32AN02T-5C	110	35	103
AH32AN02P-5C	110	35	103



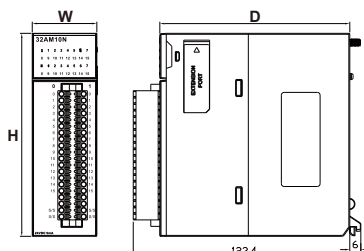
## 64-point Digital I/O Modules

Model Name	H	W	D
AH64AM10N-5C	110	35	103
AH64AN02T-5C	110	35	103
AH64AN02P-5C	110	35	103



## 32-point Digital I/O Modules

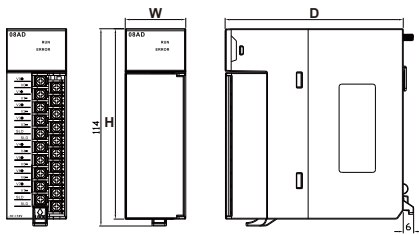
Model Name	H	W	D
AH32AM10N-5A	110	35	103
AH32AN02T-5A	110	35	103
AH32AN02P-5A	110	35	103



# Dimensions Dimensions are in mm

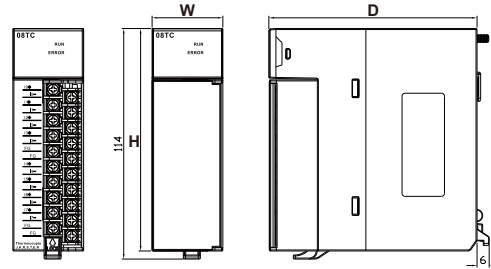
## Analog I/O Modules

Model Name	H	W	D
AH04AD-5A	110	35	103
AH08AD-5B	110	35	103
AH08AD-5C	110	35	103
AH04DA-5A	110	35	103
AH08DA-5B	110	35	103
AH08DA-5C	110	35	103
AH06XA-5A	110	35	103



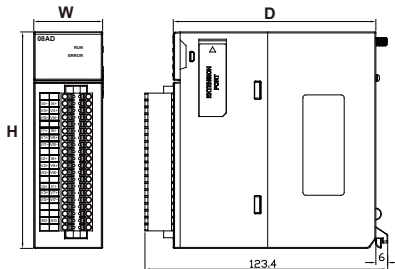
## Temperature Measurement Modules

Model Name	H	W	D
AH04PT-5A	110	35	103
AH04TC-5A	110	35	103
AH08TC-5A	110	35	103



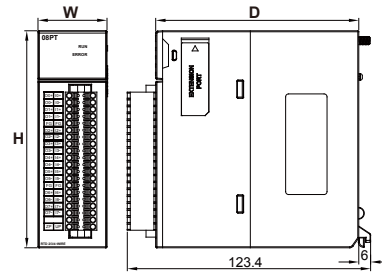
## Analog I/O Modules

Model Name	H	W	D
AH08AD-5A	110	35	103
AH08DA-5A	110	35	103



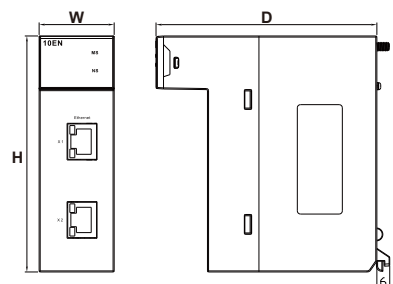
## Temperature Measurement Module

Model Name	H	W	D
AH08PTG-5A	110	35	103



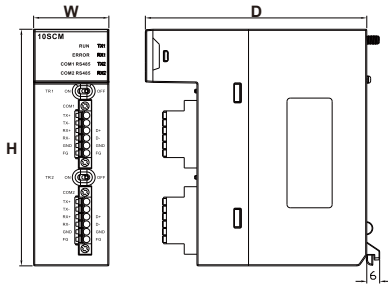
## Network Module

Model Name	H	W	D
AH10EN-5A	110	35	103
<b>New</b> AH15EN-5A	110	35	103



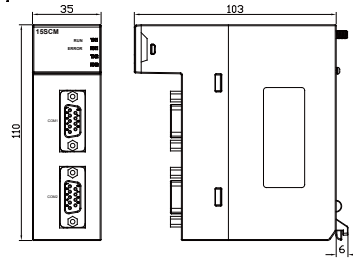
### Network Module

Model Name	H	W	D
AH10SCM-5A	110	35	103



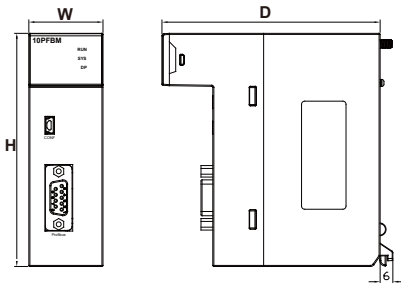
### Network Module

Model Name	H	W	D
<b>New</b> AH15SCM-5A	110	35	103



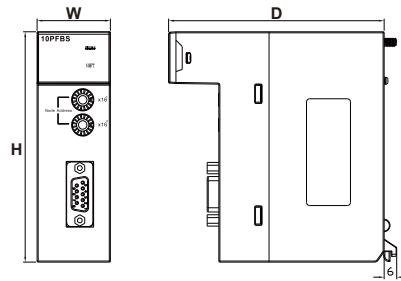
### Network Module

Model Name	H	W	D
AH10PFBM-5A	110	35	103



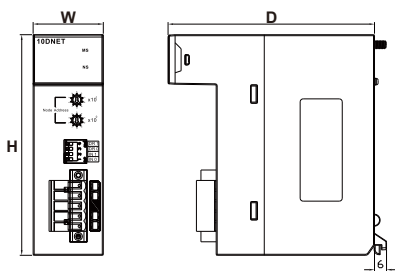
### Network Module

Model Name	H	W	D
AH10PFBS-5A	110	35	103



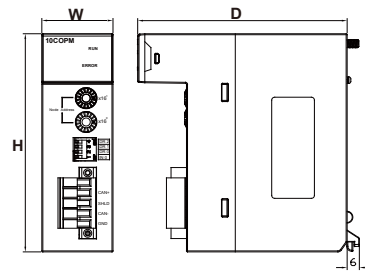
### Network Module

Model Name	H	W	D
AH10DNET-5A	110	35	103



### Network Module

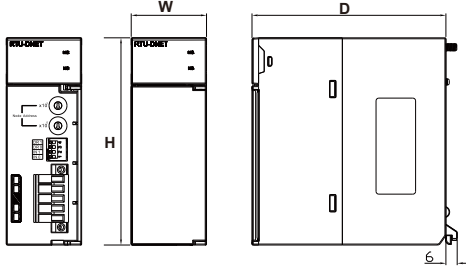
Model Name	H	W	D
AH10COPM-5A	110	35	103



# Dimensions Dimensions are in mm

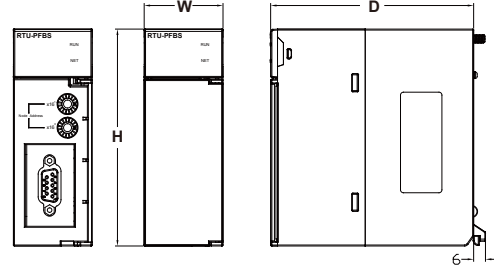
## RTU Module

Model Name	H	W	D
AHRTU-DNET-5A	110	40	103



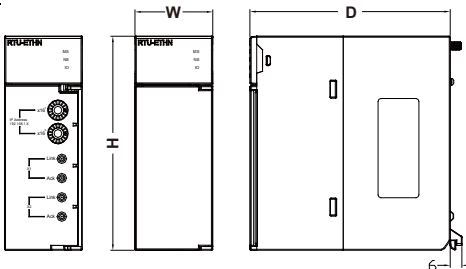
## RTU Module

Model Name	H	W	D
AHRTU-PFBS-5A	110	40	103



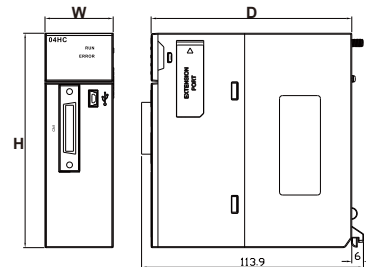
## RTU Module

Model Name	H	W	D
AHRTU-ETHN-5A	110	40	103



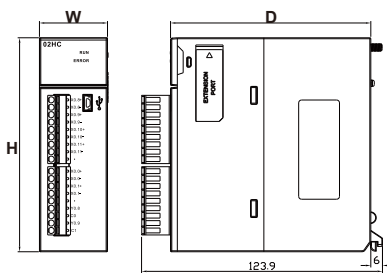
## Motion Control Module

Model Name	H	W	D
AH04HC-5A	110	35	103



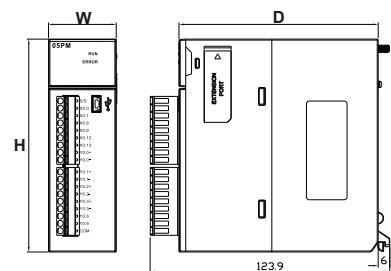
## Motion Control Module

Model Name	H	W	D
AH02HC-5A	110	35	103



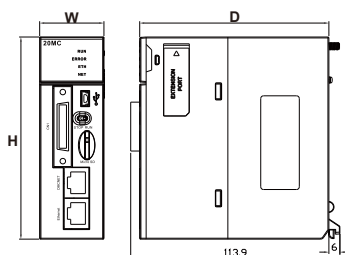
## Motion Control Module

Model Name	H	W	D
AH05PM-5A	110	35	103



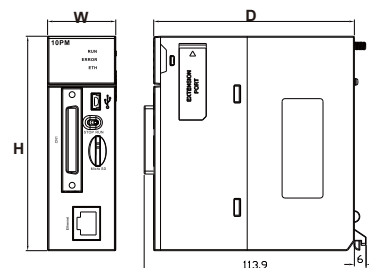
## Motion Control Module

Model Name	H	W	D
AH20MC-5A	110	35	103
AH08EMC-5A	110	35	103
AH10EMC-5A	110	35	103
AH20EMC-5A	110	35	103



## Motion Control Modules

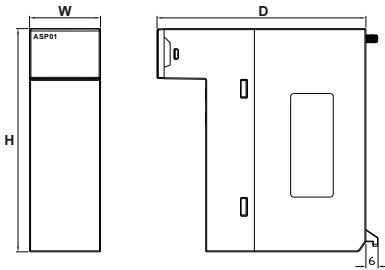
Model Name	H	W	D
AH10PM-5A	110	35	103
AH15PM-5A	110	35	103





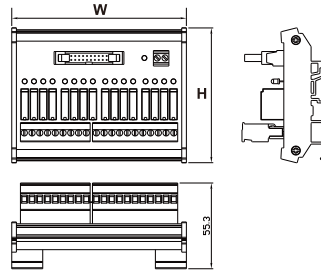
### Dummy Module

Model Name	H	W	D
AHASP01-5A	110	35	103



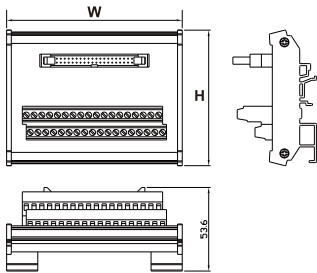
### External Terminal Modules

Model Name	H	W
UB-10-OR16A	87	113
UB-10-OR16B	87	113



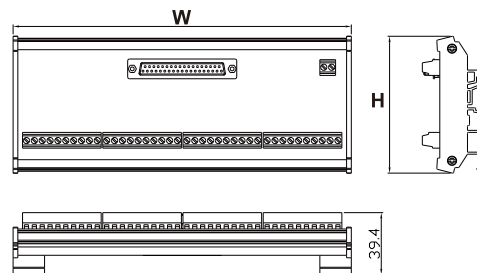
### External Terminal Modules

Model Name	H	W
UB-10-ID32A	87	113
UB-10-OT32A	87	113



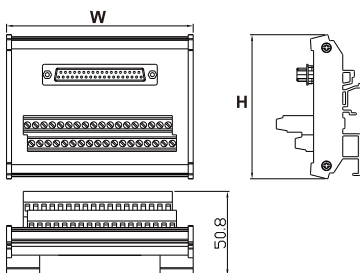
### External Terminal Modules

Model Name	H	W
UB-10-OR32A	87	215
UB-10-OR32B	87	215



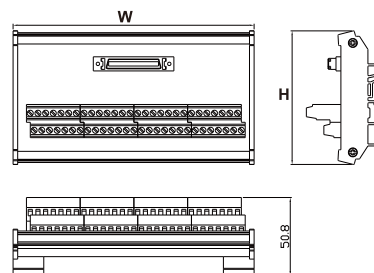
### External Terminal Modules

Model Name	H	W
UB-10-ID32B	87	113
UB-10-OT32B	87	113



### External Terminal Modules

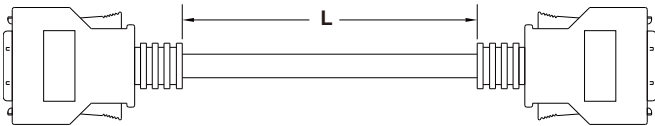
Model Name	H	W
UB-10-IO16C	87	125
UB-10-IO22C	87	125
UB-10-IO24C	87	157
UB-10-IO34C	87	157



# Dimensions Dimensions are in m

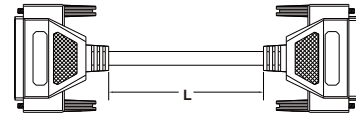
## Cables (HDC)

Model Name	L	Model name	L
AHACAB06-5A	0.6	AHACABD0-5A	40.0
AHACAB10-5A	1.0	AHACABE0-5A	50.0
AHACAB15-5A	1.5	AHACABF0-5A	60.0
AHACAB30-5A	3.0	AHACABG0-5A	70.0
AHACAB50-5A	5.0	AHACABH0-5A	80.0
AHACABA0-5A	10.0	AHACABJ0-5A	90.0
AHACABA5-5A	15.0	AHACABK0-5A	100.0
AHACABB0-5A	20.0	UC-ET010-13B	1.0
AHACABC0-5A	30.0	UC-ET010-15B	1.0



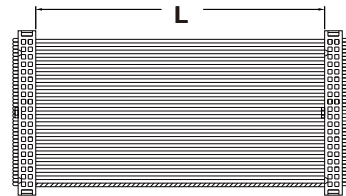
## Cable (DB37)

Model Name	L
UC-ET010-33B	1.0



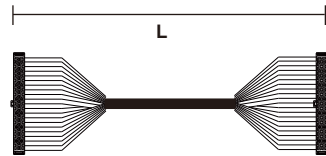
## Cable (MIL)

Model Name	L
UC-ET010-24A	1.0



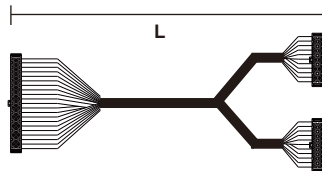
## Cable (MIL)

Model Name	L
UC-ET010-24B	1.0
UC-ET020-24B	2.0
UC-ET030-24B	3.0



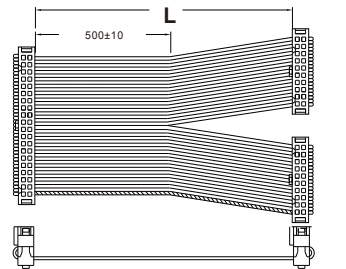
## Cable (MIL)

Model Name	L
UC-ET010-24D	1.0
UC-ET020-24D	2.0
UC-ET030-24D	3.0



## Cable (MIL)

Model Name	L
UC-ET010-24C	1.0



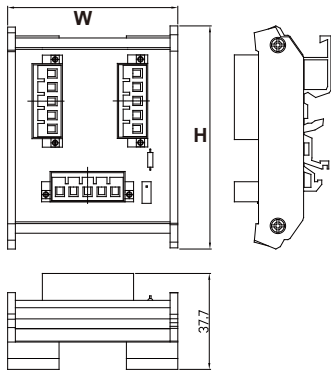
## Cables (RJ45)

Model Name	L	Model name	L	Model Name	L	Model name	L
UC-CMC003-01A	0.3	UC-CMC030-01A	3.0	UC-EMC003-02A	0.3	UC-EMC100-02A	10.0
UC-CMC005-01A	0.5	UC-CMC050-01A	5.0	UC-EMC005-02A	0.5	UC-EMC200-02A	20.0
UC-CMC010-01A	1.0	UC-CMC100-01A	10.0	UC-EMC010-02A	1.0		
UC-CMC015-01A	1.5	UC-CMC200-01A	20.0	UC-EMC020-02A	2.0		
UC-CMC020-01A	2.0			UC-EMC050-02A	5.0		



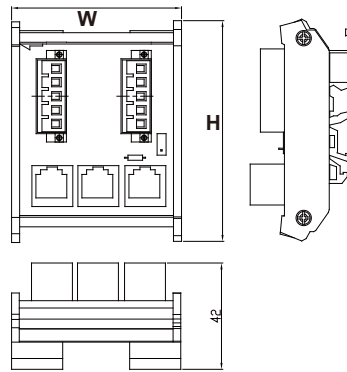
### CANopen Distribution Box

Model Name	H	W
TAP-CN01	87	66.5



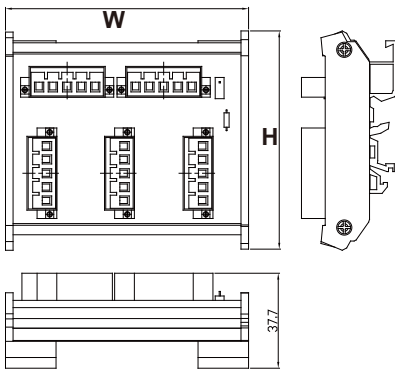
### CANopen Distribution Box

Model Name	H	W
TAP-CN03	87	66.5



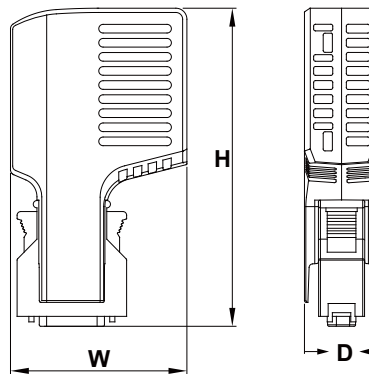
### CANopen Distribution Box

Model Name	H	W
TAP-CN02	87	96.5



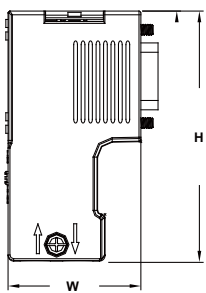
### Fiber Optics Modules for Backplanes

Model Name	H	W	D
AHAADP01EF-5A	86.5	48	20.2
AHAADP02EF-5A	86.5	48	20.2



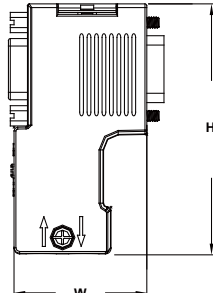
### PROFIBUS Connector

Model Name	H	W	D
UN-03PF-01A	67	35.6	15.8



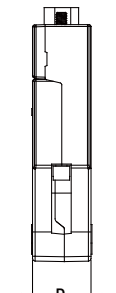
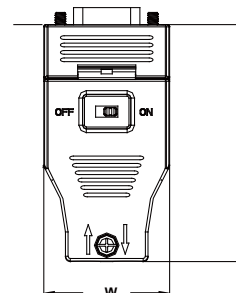
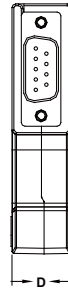
### PROFIBUS Connector

Model Name	H	W	D
UN-03PF-02A	67	35.6	15.8

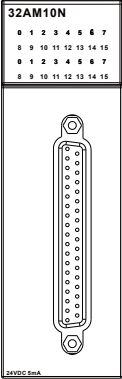

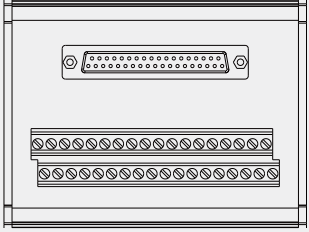


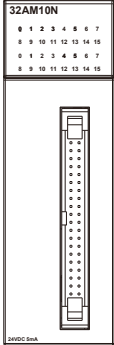
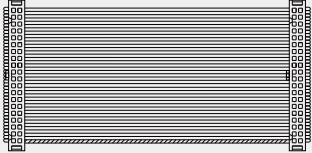
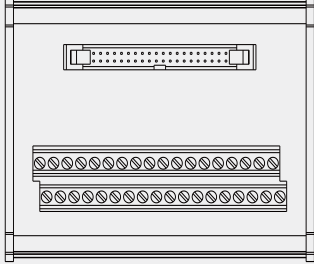

### PROFIBUS Connector

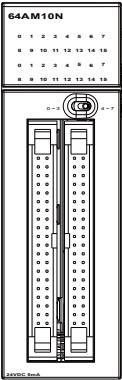
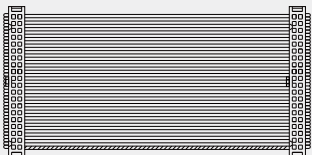
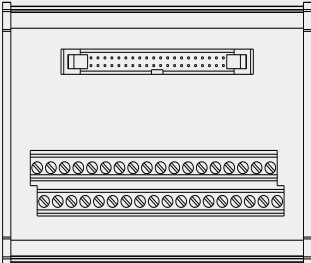

Model Name	H	W	D
UN-03PF-03A	64	35.6	15.8



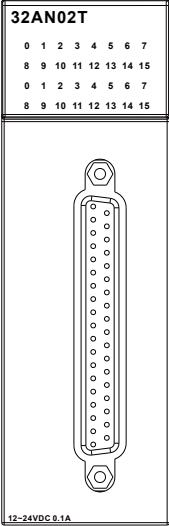

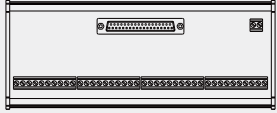
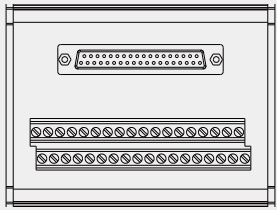
# Accessory Selection for High-density Modules

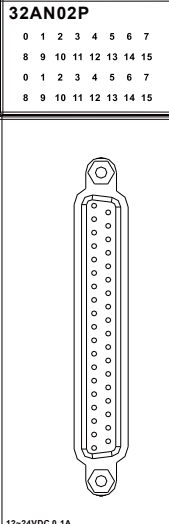

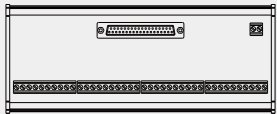
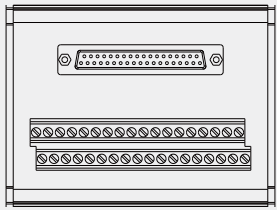
Model name		
AH32AM10N-5B	UC-ET010-33B	UB-10-ID32B
		

Model name		
AH32AM10N-5C	UC-ET010-24A	UB-10-ID32A
		
+	<b>UC-ET010-24B / UC-ET020-24B / UC-ET030-24B</b>	+
		

Model name		
AH64AM10N-5C	UC-ET010-24A	UB-10-ID32A
		
+	<b>UC-ET010-24B / UC-ET020-24B / UC-ET030-24B</b>	+
		<b>x2</b>

# Accessory Selection for High-density Modules

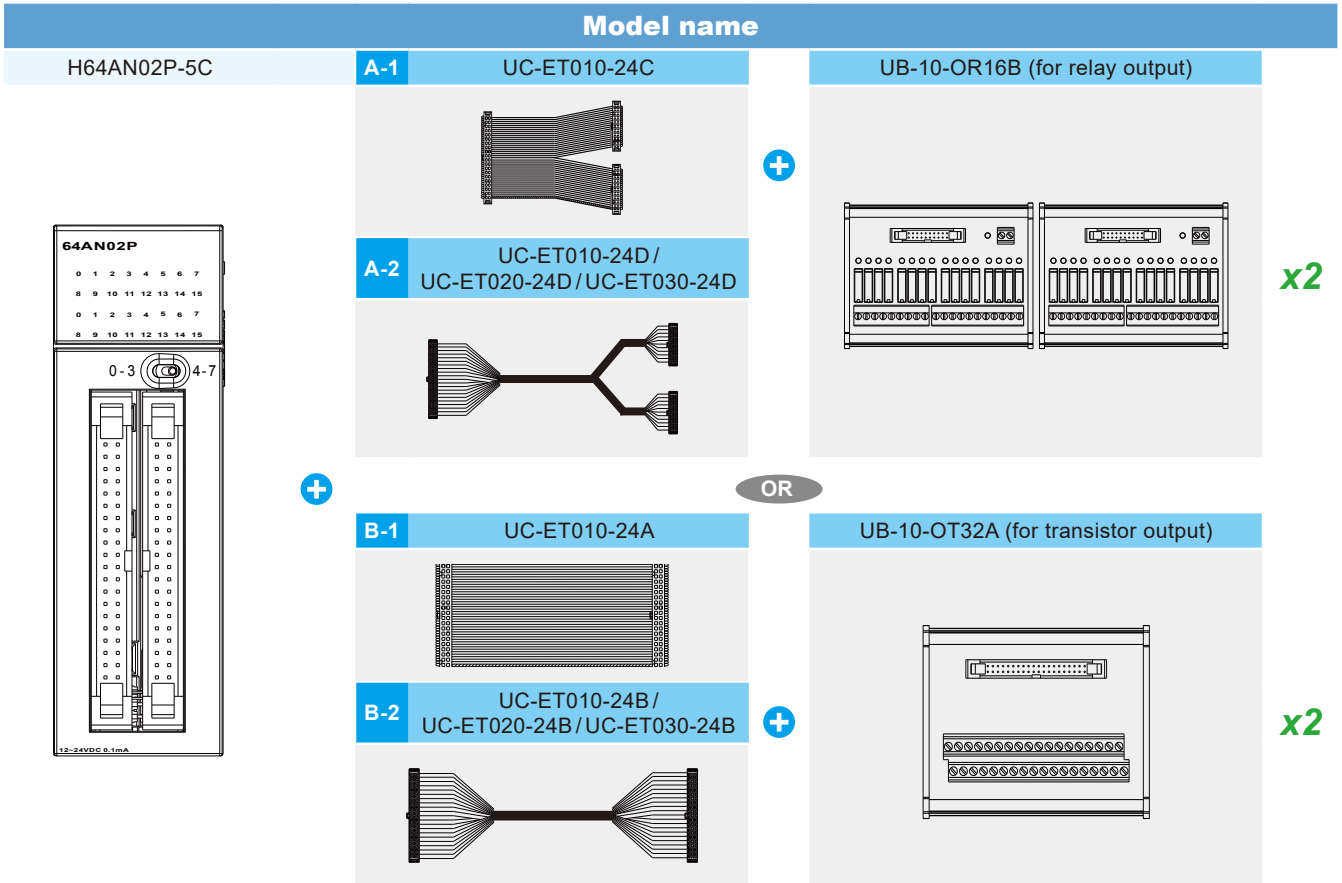
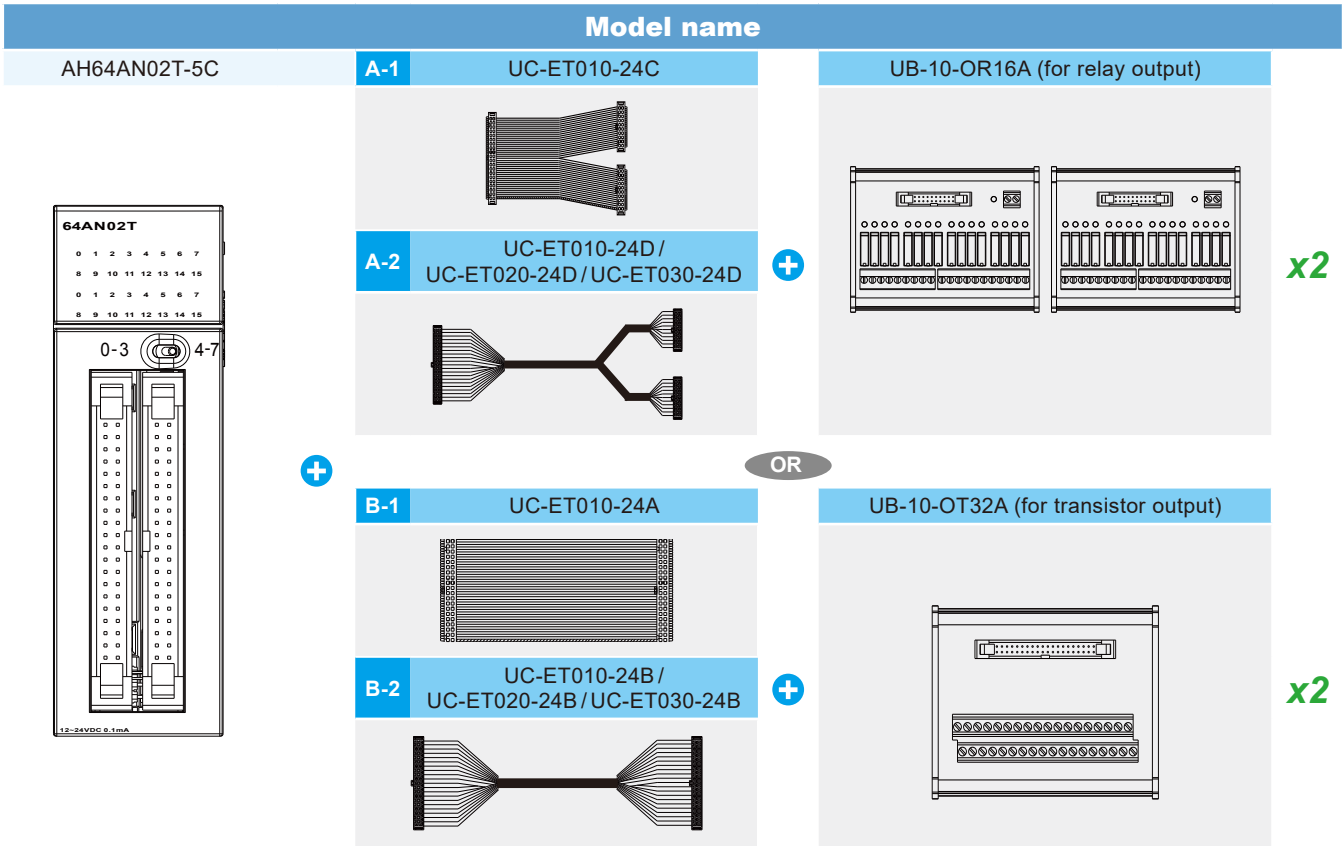
Model name		
AH32AN02T-5B	UC-ET010-33B	<b>1</b> UB-10-OR32A (for relay output)
		
		OR
		<b>2</b> UB-10-OT32B (for transistor output)
		

Model name		
AH32AN02P-5B	UC-ET010-33B	<b>1</b> UB-10-OR32B (for relay output)
		
		OR
		<b>2</b> UB-10-OT32B (for transistor output)
		

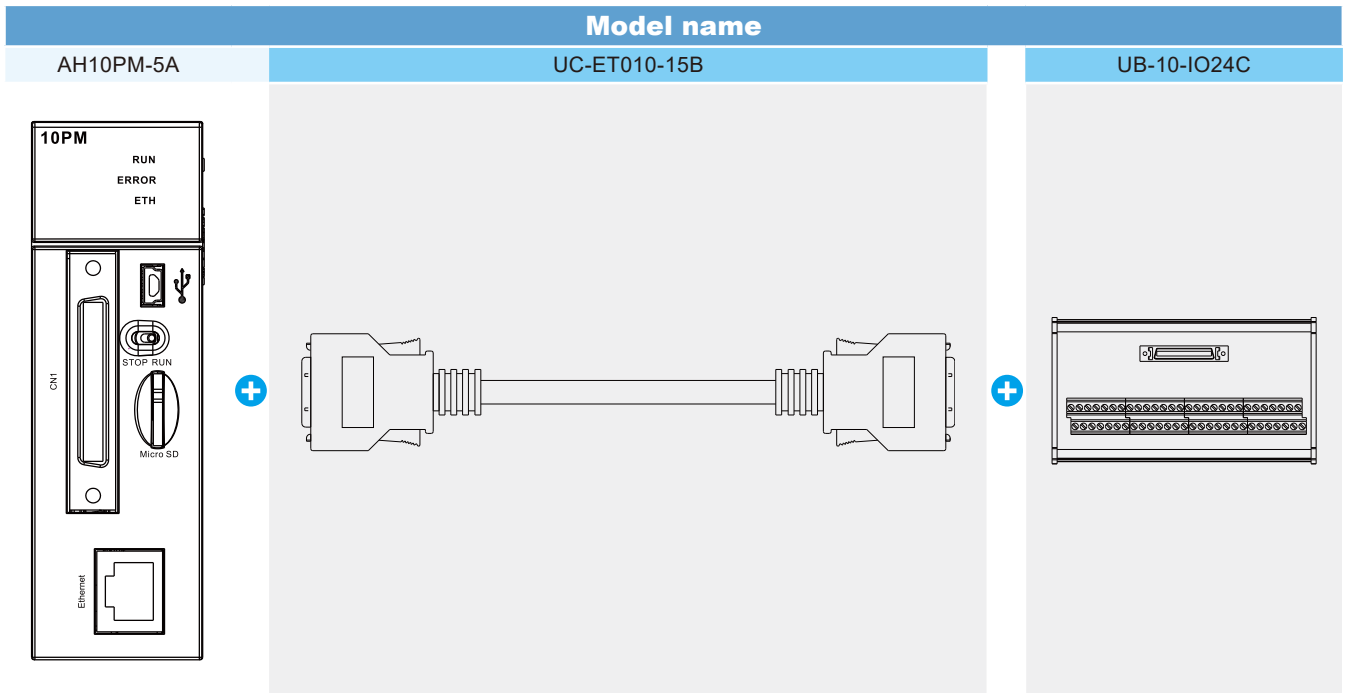
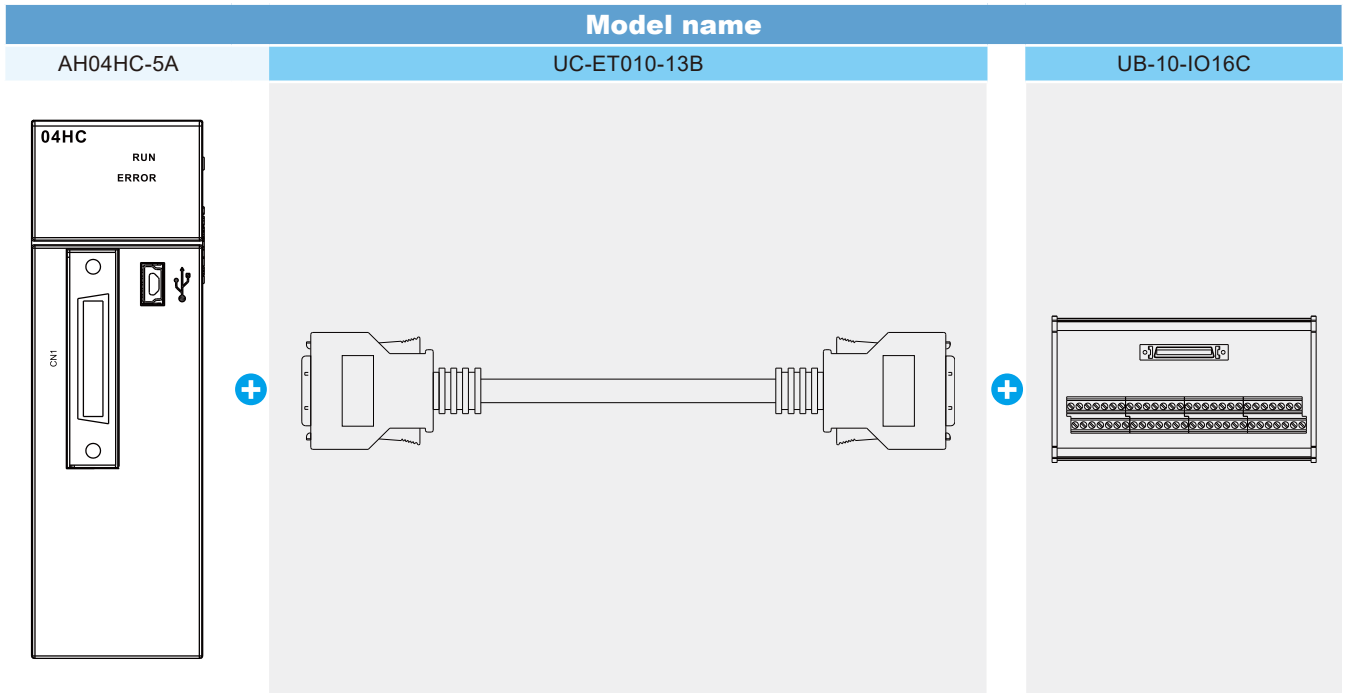
# Accessory Selection for High-density Modules

		Model name			
<p>32AN02T</p> <p>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</p> <p>12-24VDC 0.1A</p>	AH32AN02T-5C	A-1	UC-ET010-24C		UB-10-OR16A (for relay output)
	A-2	UC-ET010-24D / UC-ET020-24D / UC-ET030-24D			
	+			OR	
	B-1	UC-ET010-24A		UB-10-OT32A (for transistor output)	
	B-2	UC-ET010-24B / UC-ET020-24B / UC-ET030-24B			
	+				

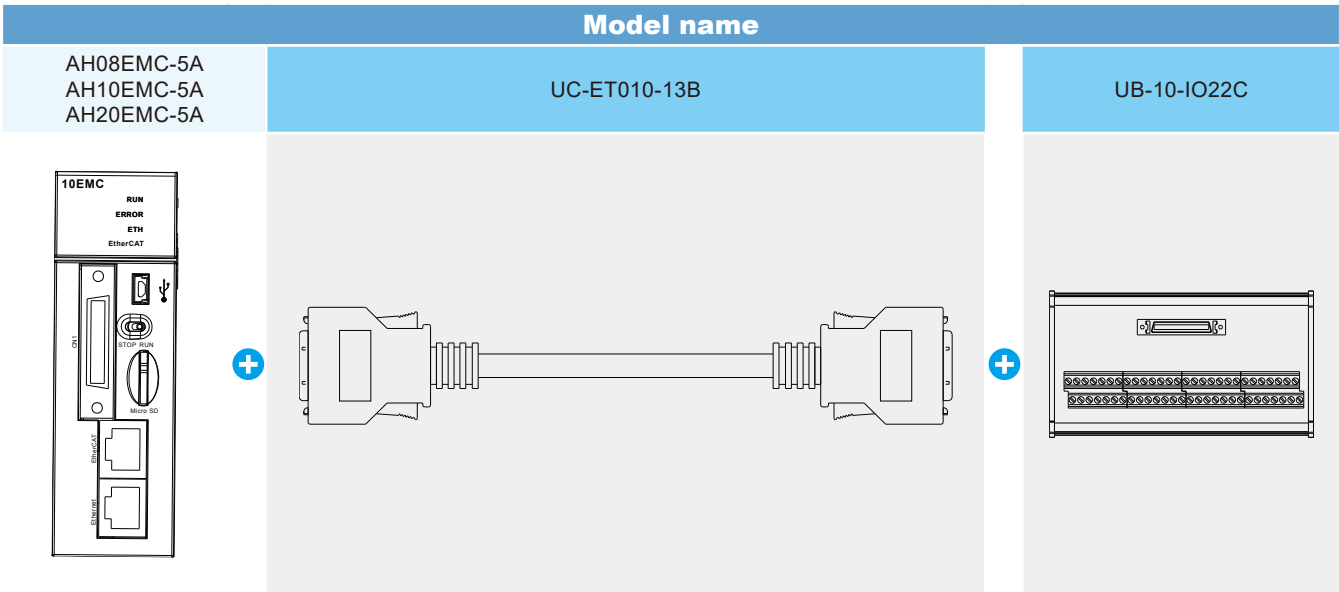
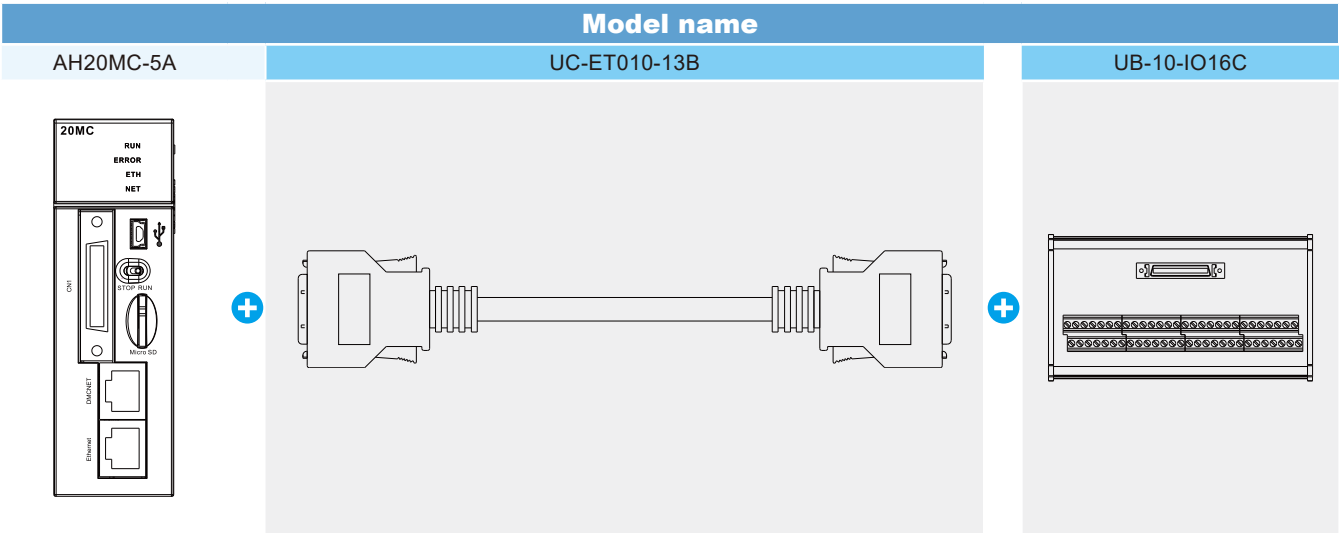
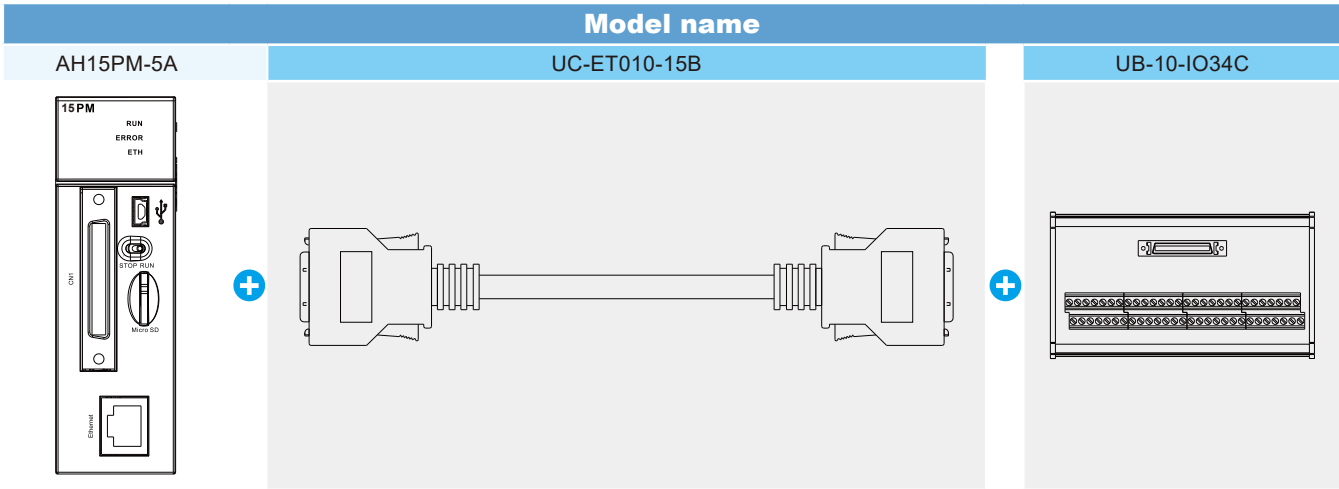
		Model name			
<p>32AN02P</p> <p>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15</p> <p>12-24VDC 0.1A</p>	AH32AN02P-5C	A-1	UC-ET010-24C		UB-10-OR16B (for relay output)
	A-2	UC-ET010-24D / UC-ET020-24D / UC-ET030-24D			
	+			OR	
	B-1	UC-ET010-24A		UB-10-OT32A (for transistor output)	
	B-2	UC-ET010-24B / UC-ET020-24B / UC-ET030-24B			
	+				



# Accessory Selection for High-density Modules







# Ordering Information



## CPU Modules

Model	Local I/O points	Program capacity	Data register D/L/B (note)	Function blocks	Extension backplane	LD execution speed (µs)	Power consumption (Internal)	Specifications	Certificates
AHCPU500-RS2	768	32k steps (128KB)	16K/16K/512k words	128	0	0.1	2w	<ul style="list-style-type: none"> <li>▪ Built-in RS-232/422/485 multi-modes communication port x 2 (RS-232: 115.2kbps/RS-422/485: 921.6kbps)</li> <li>▪ Built-in SD card slot (supports max. 2 GB for AHCPU5x0 or 32 GB for AHCPU5x1)</li> <li>▪ Built-in Mini-USB programming port</li> <li>▪ System diagnosis / status light / online editing and debug functions</li> <li>▪ PLC Link automatic data exchange function</li> <li>▪ MODBUS RTU/ASCII</li> <li>▪ LD/SFC/FBD/IL/ST languages</li> <li>▪ 256 interrupts (Timed/IO/External/Low voltage/Communication)</li> <li>▪ 2048 timers and counters</li> <li>▪ No battery required</li> <li>▪ RTC function (max. 30 days after power off)</li> </ul>	
AHCPU510-RS2	1280	64 k steps (256KB)	32K/32K/1024 k words	256	1	0.1	2w		
AHCPU511-RS2	1280	96 k steps (384 KB)	48K/48K/1024 k words	1024	1	0.02	2.9w		
AHCPU520-RS2	2304	128 k steps (512KB)	64K/64K/2048 k words	512	3	0.1	2w		
AHCPU530-RS2	4352	256 k steps (1 MB)	64K/64K/4096 k words	1024	7	0.1	2w		
AHCPU500-EN	768	32 k steps (128KB)	16K/16K/512k words	128	0	0.1	2w	<ul style="list-style-type: none"> <li>▪ Built-in RS-232/422/485 multi-modes communication port x1 (RS-232:115.2kbps/RS-422/485: 921.6kbps)</li> <li>▪ Built-in Ethernet communication port (100Mbps)</li> <li>▪ Built-in SD card slot (supports max. 2 GB for AHCPU5x0 or 32 GB for AHCPU5x1)</li> <li>▪ Built-in Mini-USB programming port</li> <li>▪ System diagnose / status light / online editing and debug functions</li> <li>▪ PLC Link automatic data exchange function</li> <li>▪ MODBUS RTU/ASCII, MODBUS TCP</li> <li>▪ EtherNet/IP (AHCPU5x1 only)                             <ul style="list-style-type: none"> <li>- Scanner &amp; Adapter mode</li> <li>- Supports I/O connection &amp; explicit message</li> <li>- Connections: TCP=32~128; CIP=64~256</li> <li>- RPI: 1~1,000ms</li> <li>- 250 words/connection</li> </ul> </li> <li>▪ LD/SFC/FBD/IL/ST languages</li> <li>▪ 256 interrupts (Timed/IO/External/Low voltage/Communication)</li> <li>▪ 2048 timers and counters</li> <li>▪ No battery required</li> <li>▪ RTC function (max. 30 days after power off)</li> <li>▪ NTP network time correction function</li> <li>▪ WEB/E-mail/IP Filter function</li> </ul>	
AHCPU510-EN	1280	64 k steps (256KB)	32K/32K/1024 k words	256	1	0.1	2w		
AHCPU511-EN	1280	96 k steps (384KB)	48K/48K/1024 k words	1024	1	0.02	2.9w		
AHCPU520-EN	2304	128 k steps (512KB)	64K/64K/2048 k words	512	3	0.1	2w		
AHCPU521-EN	2304	192 k steps (768KB)	96K/96K/2048 k words	2048	3	0.02	2.9w		
AHCPU530-EN	4352	256 k steps (1MB)	64K/64K/4096 k words	1024	7	0.1	2w		
AHCPU531-EN	4352	384 k steps (1.5 MB)	128K/128K/4096 k words	4096	7	0.02	2.9w		





Note: Data Register B is for the use of function blocks

## Redundant CPU Modules


Model	Local I/O points	Program capacity	Data register D/L/B (note)	Function blocks	Extension backplane	LD execution speed (µs)	Power consumption (Internal)	Specifications	Certificates
<b>New</b> AHCPU560-EN2	4352	1M steps (4MB)	256 k/256 k/4096 k words	4096	7	0.02	4.5w	<ul style="list-style-type: none"> <li>Built-in RS-232/485 multi-modes communication port x1 (RS-232:115.2 kbps / RS-485: 921.6 kbps)</li> <li>Built-in Ethernet communication port (100Mbps)</li> <li>Built-in SD card slot (supports max. 32 GB)</li> <li>Built-in Mini-USB programming port</li> <li>System diagnosis /status light/online editing and debug functions</li> <li>PLC Link automatic data exchange function</li> <li>MODBUS RTU/ASCII, MODBUS TCP</li> <li>EtherNet/IP                             <ul style="list-style-type: none"> <li>Scanner &amp; Adapter mode</li> <li>Supports I/O connection &amp; explicit message</li> </ul> </li> <li>Connections:                             <ul style="list-style-type: none"> <li>TCP=32~128; CIP=64~256</li> <li>RPI: 1~1,000ms</li> <li>250 words/connection</li> </ul> </li> <li>LD/SFC/FBD/IL/ST languages</li> <li>256 interrupts (Timed/IO/External/Low voltage/Communication)</li> <li>Redundant mode only supports timed interrupt</li> <li>2048 timers and counters</li> <li>No battery required</li> <li>RTC function (max. 30 days after power off)</li> <li>NTP network time correction function</li> <li>WEB/E-mail/IP Filter function</li> <li>Supports redundant system                             <ul style="list-style-type: none"> <li>CPU switch-over time: 20 ms</li> <li>Built-in sync. module</li> </ul> </li> </ul>	 

## Digital I/O Modules (Input)


Model	Points	Signals	Terminal block type	Power consumption (Internal/External)	Accessories (optional)	Specifications	Certificates
AH16AM10N-5A	16	24V <sub>DC</sub> 5mA	JIS removable terminal block	0.1w/1.9w	-	<ul style="list-style-type: none"> <li>PNP/NPN mixed mode design</li> <li>Supports hot-swapping function</li> <li>Individual LED status indicator</li> </ul>	 
AH16AM30N-5A	16	120~240V <sub>AC</sub> 4.5~9mA	JIS removable terminal block	0.1w/-	-		
AH32AM10N-5A	32	24V <sub>DC</sub> 5mA	EU removable terminal block	0.2w/3.8w	-		
AH32AM10N-5B	32	24V <sub>DC</sub> 5mA	DB37	0.2w/3.8w	UC-ET010-33B UB-10-ID32B		
AH32AM10N-5C	32	24V <sub>DC</sub> 5mA	MIL	0.2w/3.8w	UC-ET010-24A UC-ET010-24B UC-ET030-24B UB-10-ID32A		
AH64AM10N-5C	64	24V <sub>DC</sub> 3.2mA	MIL	0.2w/4.9w		<ul style="list-style-type: none"> <li>PNP/NPN mixed mode design</li> <li>Supports hot-swapping function</li> <li>Individual LED status indicator (32 points)</li> </ul>	
AH16AR10N-5A	16	24V <sub>DC</sub> 5mA	JIS removable terminal block	0.5w/1.9w	-	<ul style="list-style-type: none"> <li>PNP/NPN mixed mode design</li> <li>Supports hot-swapping function</li> <li>Individual LED status indicator</li> <li>Supports I/O interrupts</li> <li>Supports rising/falling-edge trigger modes</li> <li>Supports signal time-delay setting for 0.1/0.5/3/15/20ms</li> <li>Provides user-defined option for signal time-delay setting (Unit: 0.1ms)</li> </ul>	

# Ordering Information


## Digital I/O Modules (Output)

Model	Points	Signals	Terminal block type	Power consumption (Internal/ External)	Accessories (optional)	Specifications	Certificates
AH16AN01R-5A	16	Relay 240V <sub>AC</sub> /24V <sub>DC</sub> 2A	JIS removable terminal block	2.1w/-	-	<ul style="list-style-type: none"> <li>Supports hot-swapping function</li> <li>Individual LED status indicator</li> <li>Supports keep-last-value function when CPU shuts down</li> </ul>	
AH16AN01T-5A	16	NPN (Sink) 12~24V <sub>DC</sub> 0.5A	JIS removable terminal block	0.2w/0.4w	-		
AH16AN01P-5A	16	PNP (Source) 12~24V <sub>DC</sub> 0.5A	JIS removable terminal block	0.2w/0.4w	-		
AH16AN01S-5A	16	TRIAC 120/240V <sub>AC</sub> 0.5A	JIS removable terminal block	0.6w/-	-		
AH32AN02T-5A	32	NPN (Sink) 12~24V <sub>DC</sub> 0.1A	EU removable terminal block	0.4w/0.8w	-		
AH32AN02P-5A	32	PNP (Source) 12~24V <sub>DC</sub> 0.1A	EU removable terminal block	0.4w/0.8w	-		
AH32AN02T-5B	32	NPN (Sink) 12~24V <sub>DC</sub> 0.1A	DB37	0.4w/0.8w	UC-ET010-33B UB-10-OR32A UB-10-OT32B		
AH32AN02P-5B	32	PNP (Source) 12~24V <sub>DC</sub> 0.1A	DB37	0.4w/0.8w	UC-ET010-33B UB-10-OR32B UB-10-OT32B		
AH32AN02T-5C	32	NPN (Sink) 12~24V <sub>DC</sub> 0.1A	MIL	0.4w/0.8w	UC-ET010-24A UC-ET010-24D UC-ET010-24B UC-ET020-24D UC-ET020-24B UC-ET030-24D UC-ET030-24B UB-10-OR16A UC-ET010-24C UB-10-OT32A		
AH32AN02P-5C	32	PNP (Source) 12~24V <sub>DC</sub> 0.1A	MIL	0.4w/0.8w	UC-ET010-24A UC-ET010-24D UC-ET010-24B UC-ET020-24D UC-ET020-24B UC-ET030-24D UC-ET030-24B UB-10-OR16B UC-ET010-24C UB-10-OT32A		
AH64AN02T-5C	64	NPN (Sink) 12~24V <sub>DC</sub> 0.1A	MIL	0.6w/1.5w	UC-ET010-24A UC-ET010-24D UC-ET010-24B UC-ET020-24D UC-ET020-24B UC-ET030-24D UC-ET030-24B UB-10-OR16A UC-ET010-24C UB-10-OT32A	<ul style="list-style-type: none"> <li>Supports hot-swapping function</li> <li>Individual LED status indicator (32 points)</li> <li>Supports keep-last-value function when CPU shuts down</li> </ul>	
AH64AN02P-5C	64	PNP (Source) 12~24V <sub>DC</sub> 0.1A	MIL	0.6w/1.5w	UC-ET010-24A UC-ET010-24D UC-ET010-24B UC-ET020-24D UC-ET020-24B UC-ET030-24D UC-ET030-24B UB-10-OR16B UC-ET010-24C UB-10-OT32A		


## Digital I/O Modules (Mixed)

Model	Inputs	Outputs	Input signals	Output signals	Terminal block type	Power consumption (Internal/ External)	Specifications	Certificates
AH16AP11R-5A	8	8	24V <sub>DC</sub> 5mA	Relay 240V <sub>AC</sub> / 24V <sub>DC</sub> 2A	JIS removable terminal block	1.1w/-	<ul style="list-style-type: none"> <li>PNP/ NPN mixed mode design</li> <li>Supports hot-swapping function</li> <li>Individual LED status indicator</li> <li>Supports keep-last-value function when CPU shuts down</li> </ul>	
AH16AP11T-5A	8	8	24V <sub>DC</sub> 5mA	NPN (Sink) 12~24V <sub>DC</sub> 0.5A	JIS removable terminal block	0.2w/0.2w		
AH16AP11P-5A	8	8	24V <sub>DC</sub> 5mA	PNP (Source) 12~24V <sub>DC</sub> 0.5A	JIS removable terminal block	0.2w/0.2w		


### Analog I/O Modules (Input)

Model	Channels	Signals	Terminal block type	Power consumption (Internal/ External)	Specifications	Certificates
AH04AD-5A	4	0/1V~5V, ±5V, 0V~10V, ±10V 0/4mA~20mA ±20mA	JIS removable terminal block	0.35w/1w	<ul style="list-style-type: none"> <li>Hardware resolution: 16-bit</li> <li>Conversion time: 150 μs/channel</li> <li>Base error (ambient temp.): Voltage mode ±0.1% Current mode ±0.1%</li> <li>Base error (full temp. range): Voltage mode ±0.45% Current mode ±0.2%</li> <li>Linearity error (ambient temp.): Voltage mode ±0.07% Current mode ±0.05%</li> <li>Linearity error (full temp. range): Voltage mode ±0.12% Current mode ±0.23%</li> <li>Supports hot-swapping function</li> <li>Isolated signal design</li> <li>Diagnosis function</li> <li>Module status LED indicator</li> <li>Supports interrupt function</li> </ul>	
AH08AD-5A	8	0/1V~5V, ±5V, 0V~10V, ±10V 0/4mA~20mA, ±20mA	EU removable terminal block	1.5w/-		
AH08AD-5B	8	0/1V~5V, ±5V, 0V~10V, ±10V	JIS removable terminal block	1.9w/-		
AH08AD-5C	8	0/4mA~20mA, ±20mA	JIS removable terminal block	1.6w/-		

### Analog I/O Modules (Output)

Model	Channels	Signals	Terminal block type	Power consumption (Internal/ External)	Specifications	Certificates
AH04DA-5A	4	0/1V~5V, ±5V, 0V~10V, ±10V 0/4mA~20mA	JIS removable terminal block	0.34w/2.6w	<ul style="list-style-type: none"> <li>Hardware resolution: 16-bit</li> <li>Conversion time: 150 μs/channel</li> <li>Base error (ambient temp.): Voltage mode ±0.02% Current mode ±0.06%</li> <li>Base error (full temp. range): Voltage mode ±0.04% Current mode ±0.07%</li> <li>Linearity error (ambient temp.): Voltage mode ±0.004% Current mode ±0.01%</li> <li>Linearity error (full temp. range): Voltage mode ±0.004% Current mode ±0.01%</li> <li>Supports hot-swapping function</li> <li>Isolated signal design</li> <li>Diagnosis function</li> <li>Module status LED indicator</li> <li>Supports interrupt function</li> <li>Supports keep-last-value function when CPU shuts down</li> </ul>	
AH08DA-5A	8	0/1V~5V, ±5V, 0V~10V, ±10V 0/4mA~20mA	EU removable terminal block	1w/5w		
AH08DA-5B	8	0/1V~5V, ±5V, 0V~10V, ±10V	JIS removable terminal block	0.25w/2.2w		
AH08DA-5C	8	0/4mA~20mA	JIS removable terminal block	0.25w/3.7w		

### Analog I/O Modules (Mixed)

Model	Channels	Signals	Terminal block type	Power consumption (Internal/ External)	Specifications	Certificates
AH06XA-5A	Inputs: 4 Outputs: 2	Input: 0/1V~5V, ±5V, 0V~10V, ±10V 0/4mA~20mA, ±20mA  Output: 0/1V~5V, ±5V, 0V~10V, ±10V 0/4mA~20mA	JIS removable terminal block	0.34w/1.4w	<ul style="list-style-type: none"> <li>Hardware resolution: 16-bit</li> <li>Conversion time: 150 μs/channel</li> <li>Input accuracy: same as AH04AD-5A</li> <li>Output accuracy: same as AH04DA-5A</li> <li>Supports hot-swapping function</li> <li>Isolated signal design</li> <li>Diagnosis function</li> <li>Module status LED indicator</li> <li>Supports interrupt function</li> <li>Supports keep-last-value function when CPU shuts down</li> </ul>	

# Ordering Information

## Remote I/O Modules

Model	Power consumption (Internal/ External)	Specifications	Certificates
AHRTU-DNET-5A	0.75w/0.72w	<ul style="list-style-type: none"> <li>DeviceNet remote I/O module</li> <li>Supports max. speed of 1 Mbps</li> <li>Supports AH DIO modules, AIO modules, temperature measurement modules, and the serial communication module AH10SCM</li> </ul>	<ul style="list-style-type: none"> <li>Installing on the main backplane required</li> <li>Supports up to 7 extension racks</li> <li>Diagnosis function</li> <li>Module status LED indicator</li> </ul>
AHRTU-PFBS-5A	1.9w/-	<ul style="list-style-type: none"> <li>PROFIBUS-DP remote I/O module</li> <li>Max. speed: 12 Mbps</li> <li>Supports AH digital I/O modules, analog I/O modules, temperature measurement modules</li> <li>Installs on main backplane</li> </ul>	<ul style="list-style-type: none"> <li>Supports 7 extension backplanes</li> <li>Diagnosis function</li> <li>Module status LED indicator</li> <li>Configurable I/O capacity: 122 words for input/ 122 words for output</li> </ul>
AHRTU-ETHN-5A	2.2w / -	<ul style="list-style-type: none"> <li>EtherNet/IP remote I/O module</li> <li>Supports I/O connection &amp; explicit message</li> <li>Connections: TCP=48 ; CIP=96</li> <li>RPI: 1 ~ 1,000ms</li> <li>PPS: 10,000</li> <li>250 words /connection</li> <li>Supports AH digital I/O modules, analog I/O modules, temperature measurement modules</li> </ul>	<ul style="list-style-type: none"> <li>Installed on main backplane</li> <li>Supports 7 extension backplanes</li> <li>Diagnosis function</li> <li>Module status LED indicator</li> <li>2 Ethernet ports (switch function)</li> <li>Configurable I/O capacity: 234 words IN ; 234 words OUT</li> </ul>




## Temperature Measurement Modules

Model	Channels	Signals	Resolution	Conversion time	Terminal block type	Power consumption (Internal/ External)	Specifications	Certificates
AH04PT-5A	4	(2/3/4-wire RTD input) Pt100, Pt1000, Ni100, Ni1000, 0Ω~300Ω	0.1°C/0.1°F 0.1% (0Ω~300Ω)	2/4-wire: 150 ms/channel 3-wire: 300 ms/channel	JIS removable terminal block	2w / -	<ul style="list-style-type: none"> <li>Effective resolution: 16-bit</li> <li>Accuracy: ±0.6% (Full Scale)</li> <li>Supports hot-swapping function</li> </ul>	
AH04TC-5A	4	Thermocouple input J,K,R,S,T,E,N, ±150mV	0.1°C/0.1°F	200 ms/channel	JIS removable terminal block	1.5w / -	<ul style="list-style-type: none"> <li>Signal isolated design</li> <li>Diagnosis function</li> </ul>	
AH08TC-5A	8	Thermocouple input J,K,R,S,T,E,N, ±150mV	0.1°C/0.1°F	200 ms/channel	JIS removable terminal block	1.5w / -	<ul style="list-style-type: none"> <li>PID function</li> <li>Module status LED indicator</li> <li>Supports interrupt function</li> </ul>	
AH08PTG-5A	8	(2/3/4-wire RTD input) Pt100, Pt1000, Ni100, Ni1000, 0Ω~300Ω	0.1°C/0.1°F 0.1% (0Ω~300Ω)	2/4-wire: 20 ms (fast) ~ 100 ms (normal)/channel 3-wire: 200 ms/channel	EU removable terminal block	0.7w/4w	<ul style="list-style-type: none"> <li>Supports disconnection detection function</li> <li>Fully isolated channel design (AH08PTG-5A)</li> </ul>	


## Power Supply Modules

Model	Power input	Output	Specifications	Certificates
AHPS05-5A	100~240 V <sub>AC</sub> 50/60Hz	60W	<ul style="list-style-type: none"> <li>Power supply for the modules on the racks</li> <li>LED power indicator</li> </ul>	
AHPS15-5A	24 V <sub>DC</sub>	36W	<ul style="list-style-type: none"> <li>Provides external DC power abnormal signal detection input and triggered interrupt function</li> </ul>	

## Network Modules



Model	Power consumption (Internal/External)	Specifications		Certificates
AH10EN-5A	1.6w/-	<ul style="list-style-type: none"> <li>Ethernet communication module (Master/Slave)</li> <li>100Mbps communication port × 2 (switch function available)</li> <li>Ether Link function</li> <li>MODBUS TCP function</li> <li>Automatic data exchange function</li> <li>NTP network time correction function</li> </ul>	<ul style="list-style-type: none"> <li>SNMP/E-mail/IP Filter function</li> <li>EtherNet/IP                             <ul style="list-style-type: none"> <li>Scanner &amp; Adapter mode</li> <li>Supports I/O connection &amp; explicit message</li> <li>Connections: TCP=64 ; CIP=64</li> <li>RPI: 1~1,000ms</li> <li>PPS: 6,400</li> <li>250 words/connection</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Supports hot-swapping function</li> <li>Diagnosis function</li> <li>Module status LED indicator</li> </ul> 
<b>New</b> AH15EN-5A	1.6w/-	<ul style="list-style-type: none"> <li>Ethernet communication module (Master/Slave)</li> <li>100Mbps communication port × 2 (switch function available)</li> <li>Ether Link function</li> <li>MODBUS TCP function</li> <li>Automatic data exchange function</li> <li>NTP network time correction function</li> </ul>	<ul style="list-style-type: none"> <li>SNMP/E-mail/IP Filter function</li> <li>Supports IEC60870</li> </ul>	
AH10SCM-5A	1.2w/-	<ul style="list-style-type: none"> <li>Serial communication module (Master/Slave)</li> <li>Full isolation design in power &amp; signal circuits</li> <li>Built-in RS-422/RS-485 with communication port × 2 (multiple modes, 460.8Kbps)</li> <li>Supports PLC Link function</li> </ul>	<ul style="list-style-type: none"> <li>Supports user defined communication format (UD Link)</li> <li>MODBUS RTU/ASCII function available</li> </ul>	
<b>New</b> AH15SCM-5A	1w/-	<ul style="list-style-type: none"> <li>Serial communication module (Master/Slave)</li> <li>Full isolation design in power &amp; signal circuits</li> <li>Built-in RS-232 with communication port × 2 (multiple modes, 460.8Kbps)</li> <li>Supports PLC Link function</li> </ul>	<ul style="list-style-type: none"> <li>Supports automatic data exchange function</li> <li>Supports BACnet Slave function</li> </ul>	
AH10DNET-5A	0.9w/0.72w	<ul style="list-style-type: none"> <li>DeviceNet communication module (Master/Slave)</li> <li>Supports max. speed of 1Mbps</li> <li>Switchable between master and slave modes</li> </ul>	<ul style="list-style-type: none"> <li>Connects up to 63 slave stations in master mode</li> <li>RIO capacity in master mode: 490 words IN/OUT</li> </ul>	
AH10PFBM-5A	2w/-	<ul style="list-style-type: none"> <li>PROFIBUS-DP master module</li> <li>Supports DPV0/DPV1</li> <li>Max. speed: 12Mbps</li> </ul>	<ul style="list-style-type: none"> <li>Connects up to 124 slaves</li> <li>Configurable I/O capacity: 2880 words for input/2880 words for output</li> </ul>	
AH10PFBS-5A	1w/-	<ul style="list-style-type: none"> <li>PROFIBUS-DP slave module</li> <li>Supports DPV0</li> <li>Max. speed: 12Mbps</li> </ul>	<ul style="list-style-type: none"> <li>Configurable I/O capacity: 100 words for input/100 words for output</li> </ul>	
AH10COPM-5A	1w/-	<ul style="list-style-type: none"> <li>CANopen module (Master/Slave)</li> <li>Max. speed: 1Mbps</li> <li>Connects up to 100 slaves in master mode</li> </ul>		

## General Modules Specifications



Item	Specifications
Operating Conditions	<ul style="list-style-type: none"> <li>Temperature: -20~60°C</li> <li>Relative Humidity: 5~95% (Non-Condensing)</li> </ul>
Storage Conditions	<ul style="list-style-type: none"> <li>Temperature: -40~70°C</li> <li>Relative Humidity: 5~95% (Non-Condensing)</li> </ul>
Certificates	

# Ordering Information

## Main Backplanes

Model	Slot	Power consumption (Internal)	Specifications	Certificates
AHBP04M1-5A	4	0.01 w	<ul style="list-style-type: none"> <li>Supports CPU modules</li> <li>Supports remote I/O communication modules (RTU)</li> <li>Built-in communication port for extension backplanes</li> <li>Slot spaces are not occupied by Power/CPU/RTU modules</li> <li>Supports redundant power (AHBPxxMR1-5A only)</li> </ul>	
AHBP06M1-5A	6	0.01 w		
AHBP08M1-5A	8	0.01 w		
AHBP12M1-5A	12	0.01 w		
<b>New</b> AHBP04MR1-5A	4	0.2 w	<ul style="list-style-type: none"> <li>Supports AHxxEMC-5A installed on CPU slot only (Do not support CPU/RTU modules)</li> <li>Built-in serial communication port</li> <li>Slot spaces are not occupied by Power/CPU</li> </ul>	
AHBP03M2-5A	3	1.41 w		
AHBP05M2-5A	5	1.41 w		
AHBP07M2-5A	7	1.41 w		

## Extension Backplanes

Model	Slot	Power consumption (Internal)	Specifications	Certificates
AHBP06E1-5A	6	1.41 w	<ul style="list-style-type: none"> <li>For main backplane extension</li> <li>Built-in communication port for extension backplanes</li> <li>Slot spaces are not occupied by power modules</li> <li>Supports redundant ext. ports (AHBPxxER1-5A only)</li> <li>Supports redundant power (AHBPxxER1-5A only)</li> </ul>	 
AHBP08E1-5A	8	1.41 w		
<b>New</b> AHBP06ER1-5A	6	1 w		
<b>New</b> AHBP08ER1-5A	8	1 w		

## Software



Software	Model	License	Descriptions	Compatible Products
ISPSoft [V3]	-	Free	PLC programming software	AH series , DVP series PLCs
COMMGR [V1]	-	Free	Communication management software	AH series , DVP series PLCs
PMSOft [V2]	-	Free	Motion control programming software	AH series , DVP series motion controllers
DCISoft [V1]	-	Free	Ethernet configuration software	AH series Ethernet/serial communication modules, DVP series built-in Ethernet PLCs, DVP series Ethernet/serial communication modules, IFD series Ethernet modules, CMC series Ethernet cards for Delta motor drives
DeviceNet Builder [V2]	-	Free	DeviceNet configuration software	AH series DeviceNet modules, DVP series DeviceNet modules, CMC series DeviceNet cards for Delta motor drives
CANopen Builder [V2]	-	Free	CANopen configuration software	AH series CANopen modules, DVP series built-in CANopen PLCs, DVP series CANopen modules, DVP10MC motion controller
SYCON.net [V1]	-	Free	PROFIBUS DP configuration software	AH series PROFIBUS DP modules
Delta OPC [V1]	HASP-20-OPC01	Hardware license (USB)	Delta OPC server	AH series PLCs
ECAT Builder [V1]	-	Free	EtherCAT configuration software	AH series , DVP series PLCs
EIP Builder [V1]	-	Free	EtherNet/IP configuration software	AH series , DVP series PLCs

## Ethernet Connection Information

Connection type	AHCPU500/510/520/530-EN	AHCPU511/521/531-EN AHCPU560-EN2 <b>New</b>	AH08/10/20EMC-5A	AH10EN-5A	AHRTU-ETHN-5A
MODBUS (Server)	32	32	32	128	---
MODBUS (Client)	16/32/64/128	32/64/128	128	64	---
EtherNet/IP (TCP)	-	32/64/128	16	64	48
EtherNet/IP (CIP)	-	64/128/256	32	64	96




## Motion Control Modules

Model	Channels / Axes	Terminal block type	Power consumption (Internal)	Accessories (optional)	Specifications	Certificates
AH02HC-5A	2	EU removable terminal block	2.4 w	-	<ul style="list-style-type: none"> <li>High speed counter</li> </ul>	 
AH04HC-5A	4	HDC	2.4 w	UC-ET010-13B UB-10-IO16C	<ul style="list-style-type: none"> <li>High speed counter</li> </ul>	
AH05PM-5A	2	EU removable terminal block	2.7 w	-	<ul style="list-style-type: none"> <li>Pulse train motion control module</li> <li>Supports 1MHz output</li> <li>Supports 2-axis linear interpolation, 2-axis arc interpolation</li> </ul>	
AH10PM-5A	6	HDC	2.7 w	UC-ET010-15B UB-10-IO24C	<ul style="list-style-type: none"> <li>Pulse train motion control module</li> <li>Supports 1MHz output (4 axes) 200kHz output (2 axes)</li> <li>Supports 2~6-axis linear interpolation, 2-axis arc interpolation and 3-axis helical interpolation</li> <li>Built in Ethernet communication port</li> <li>Supports Micro SD card</li> </ul>	
AH15PM-5A	4	HDC	2.7 w	UC-ET010-15B UB-10-IO34C	<ul style="list-style-type: none"> <li>Pulse type motion control module</li> <li>Supports 1MHz output</li> <li>Supports 2~4-axis linear interpolation, 2-axis arc interpolation, 3-axis helical interpolation</li> <li>Built-in Ethernet communication port</li> <li>Supports Micro SD card</li> <li>Supports limit switch (LSP / LSN) input</li> </ul>	
AH20MC-5A	12	HDC	3 w	UC-ET010-13B UB-10-IO16C	<ul style="list-style-type: none"> <li>DMCNET communication motion control module (10 Mbps)</li> <li>Min. synchronization time at 12 axes is 1ms</li> <li>Supports 2~6-axis linear interpolation, 2-axis arc interpolation and 3-axis helical interpolation</li> <li>Built in Ethernet communication port</li> <li>Supports Micro SD card</li> </ul>	
AH08EMC-5A	8	HDC	3.3 w	UC-ET010-13B UB-10-IO22C	<ul style="list-style-type: none"> <li>EtherCAT communication motion control (100 Mbps)</li> <li>Min. synchronization time at 8/16/32 axes is 0.5/1/2 ms</li> <li>Supports 2~6-axis linear interpolation, 2-axis arc interpolation and 3-axis helical interpolation</li> </ul>	
AH10EMC-5A	16				<ul style="list-style-type: none"> <li>Built in Ethernet communication port</li> <li>Supports Micro SD card</li> <li>Supports EtherNet/IP</li> <li>- Adapter mode</li> <li>- Supports I/O connection &amp; explicit message</li> <li>- Connections: TCP= 16 ; CIP= 32</li> <li>- RPI: 2 ~ 1,000 ms</li> <li>- PPS: 3,200</li> <li>- 250 words / connection</li> </ul>	
AH20EMC-5A	32				<ul style="list-style-type: none"> <li>CPU execution speed: LD instruction @ 0.08 μs</li> </ul>	

Note: Supports DIO(except interrupt module), AIO, MC, PM, HC, COPM and SCM modules in the first stage.

# Ordering Information

## Accessories

Products	Descriptions	Models	Specifications	Applicable Modules	Certificates
Cables	Extension cable for connecting extension backplane	AHACAB06-5A	0.6m	AHBP04M1-5A AHBP06M1-5A AHBP08M1-5A AHBP12M1-5A AHBP06E1-5A AHBP08E1-5A	
		AHACAB10-5A	1.0m		
		AHACAB15-5A	1.5m		
		AHACAB30-5A	3.0m		
		AHACAB50-5A	5.0m		
		AHACABA0-5A	10.0m		
		AHACABA5-5A	15.0m		
		AHACABB0-5A	20.0m		
		AHACABC0-5A	30.0m		
		AHACABD0-5A	40.0m		
		AHACABE0-5A	50.0m		
		AHACABF0-5A	60.0m		
		AHACABG0-5A	70.0m		
		AHACABH0-5A	80.0m		
		AHACABJ0-5A	90.0m		
	AHACABK0-5A	100.0m			
	I/O extension cable for connecting external terminal modules	UC-ET010-24A	1.0m/MIL	AH32AM10N-5C	
		UC-ET010-24B	1.0m/MIL (Shielded)	AH32AN02T-5C	
		UC-ET020-24B	2.0m/MIL (Shielded)	AH32AN02P-5C AH64AM10N-5C AH64AN02T-5C AH64AN02P-5C	
		UC-ET030-24B	3.0m/MIL (Shielded)	AH32AN02T-5C AH32AN02P-5C	
		UC-ET010-24C	1.0m/MIL	AH32AN02T-5C	
		UC-ET010-24D	1.0m/MIL (Shielded)	AH32AN02P-5C	
		UC-ET020-24D	2.0m/MIL (Shielded)	AH64AN02T-5C	
		UC-ET030-24D	3.0m/MIL (Shielded)	AH64AN02P-5C	
		UC-ET010-33B	1.0m/DB37	AH32AM10N-5B AH32AN02T-5B AH32AN02P-5B	
		UC-ET010-13B	1.0m/HDC	AH04HC-5A AH20MC-5A AH08EMC-5A AH10EMC-5A AH20EMC-5A	
		UC-ET010-15B	1.0m/HDC	AH10PM-5A AH15PM-5A	
		CANopen/DeviceNet cables	UC-DN01Z-01A	305.0m (Thick/Trunk Cable)	
	UC-DN01Z-02A		305.0m (Thin/Drop Cable)	AHRTU-DNET-5A TAP-CN01 TAP-CN02 TAP-CN03	
	CANopen/DeviceNet/DMCNET cables	UC-CMC003-01A	0.3m/RJ45	AH20MC-5A TAP-CN03	
		UC-CMC005-01A	0.5m/RJ45		
		UC-CMC010-01A	1.0m/RJ45		
		UC-CMC015-01A	1.5m/RJ45		
		UC-CMC020-01A	2.0m/RJ45		
		UC-CMC030-01A	3.0m/RJ45		
		UC-CMC050-01A	5.0m/RJ45		
		UC-CMC100-01A	10.0m/RJ45		
	UC-CMC200-01A	20.0m/RJ45			
	<b>New</b> EtherCAT cables	UC-EMC003-02A	0.3m/RJ45	AH08EMC-5A AH10EMC-5A AH20EMC-5A	
		UC-EMC005-02A	0.5m/RJ45		
		UC-EMC010-02A	1.0m/RJ45		
		UC-EMC020-02A	2.0m/RJ45		
		UC-EMC050-02A	5.0m/RJ45		
		UC-EMC100-02A	10.0m/RJ45		
	UC-EMC200-02A	20.0m/RJ45			
PROFIBUS cables	UC-PF01Z-01A	305.0m	AH10PFBM-5A AH10PFBS-5A AHRTU-PFBS-5A		

## Accessories

Products	Descriptions	Models	Specifications	Applicable Modules	Certificates
External terminal modules	For digital input modules	UB-10-ID32A	MIL	AH32AM10N-5C AH64AM10N-5C	CE
		UB-10-ID32B	DB37	AH32AM10N-5B	
	For digital output modules	UB-10-OR16A	16 points relay output (240 V <sub>AC</sub> /24 V <sub>DC</sub> , 2A) MIL	AH32AN02T-5C AH64AN02T-5C	
		UB-10-OR16B	16 points relay output (240 V <sub>AC</sub> /24 V <sub>DC</sub> , 2A) MIL	AH32AN02P-5C AH64AN02P-5C	
		UB-10-OR32A	32 points relay output (240 V <sub>AC</sub> /24 V <sub>DC</sub> , 2A) DB37	AH32AN02T-5B	
		UB-10-OR32B	32 points relay output (240 V <sub>AC</sub> /24 V <sub>DC</sub> , 2A) DB37	AH32AN02P-5B	
		UB-10-OT32A	Transistor output MIL	AH32AN02T-5C AH32AN02P-5C AH64AN02T-5C AH64AN02P-5C	
		UB-10-OT32B	Transistor output DB37	AH32AN02T-5B AH32AN02P-5B	
	For motion control modules	UB-10-IO16C	HDC	AH32AN02T-5C AH32AN02P-5C AH64AN02T-5C AH64AN02P-5C	
		UB-10-IO22C	HDC	AH08EMC-5A AH10EMC-5A AH20EMC-5A	
		UB-10-IO24C	HDC	AH10PM-5A	
		UB-10-IO34C	HDC	AH15PM-5A	
Connectors	PROFIBUS connectors	UN-03PF-01A	90° connector		
		UN-03PF-02A	90° connector with programming port		
		UN-03PF-03A	180° connector		
Terminal resistors	DMCNET terminal resistors (RJ45)	ASD-TR-DM0008			
	CANopen/DeviceNet terminal resistors (RJ45)	TAP-TR01			
Distribution box	CANopen/ DeviceNet distribution Box	TAP-CP01	Power distribution box	CE	
		TAP-CN01	1 for 2		
		TAP-CN02	1 for 4		
		TAP-CN03	1 for 4 (RJ45)		
Dummy modules	To protect empty slots	AHASP01-5A			
DIN rail	Used on DIN rail for rack installation	AHADINADP1-5A			
Fiber optics modules for backplanes	Used for backplane extension via fiber optics (installs at the backplane's lower extension port)	AHAADP01EF-5A	<ul style="list-style-type: none"> <li>Optical fiber connector: SC</li> <li>Supported optical fiber types: multi-modes, 62.5/125 μm or 50/125 μm</li> </ul>	AHBP04M1-5A AHBP06M1-5A AHBP08M1-5A AHBP12M1-5A AHBP06E1-5A AHBP08E1-5A	CE UL US
	Used for backplane extension via fiber optics (installs at the backplane's upper extension port)	AHAADP02EF-5A		<ul style="list-style-type: none"> <li>Optical fiber max. length: 2km</li> </ul>	
FE SFP Fiber Transceiver	Used for redundant CPU	LCP-155A4HDRJ LCP-155A4HDRTJ	<ul style="list-style-type: none"> <li>Connector: LC</li> <li>Fiber optics: Multi-mode</li> <li>Max. cable length: 5km</li> <li>Operation temperature: ...DRJ: -5~70 °C ...DRTJ: -40~85 °C</li> </ul>	AHCPU560-EN2	CE UL US
		LCP-155B4JDRJ LCP-155B4JDRTJ	<ul style="list-style-type: none"> <li>Connector: LC</li> <li>Fiber optics: Single-mode</li> <li>Max. cable length: 30km</li> <li>Operation temperature: ...DRJ: -5~70 °C ...DRTJ: -40~85 °C</li> </ul>		
		LCP-155B4MDRJ LCP-155B4MDRTJ	<ul style="list-style-type: none"> <li>Connector: LC</li> <li>Fiber optics: Single-mode</li> <li>Max. cable length: 60km</li> <li>Operation temperature: ...DRJ: -5~70 °C ...DRTJ: -40~85 °C</li> </ul>		
Memory card	SD card: 1 GB	FMC-SD001G	<ul style="list-style-type: none"> <li>Capacity: 1 GB</li> <li>Overwrite: 10,000 times</li> </ul>	<ul style="list-style-type: none"> <li>Speed (Read/Write) : Max. 18/15 MB/s</li> <li>Operation temperature: -40 ~ 85 °C</li> </ul>	



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