

The Smart Solution for Industrial Machines and System Integration



Automation for a Changing World

Delta Programmable Logic Controller AH500 Series



TAIWAN
EXCELLENCE
2013

www.deltaww.com

 **DELTA**
Smarter. Greener. Together.

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 price/performance, and an abundant selection of extension modules, the AH Series PLC also provides exceptional system expandability, greatly reducing the system cost for a broad range of applications.





AH500 Series

» Highly integrated software ISPSoft: graphical interface with 5 programming languages

» Enhanced flexibility: Max. 100m between 2 local extension racks

» Hot-swapping function keeps the system running for improved maintainability

» Reliable operations of the supported modules in severe conditions

< Operating condition: -20~60°C / 5~95% (No condensation)
< Storage condition: -40~70°C / 5~95% (No condensation)

▶ Utilizes a dual-core multi-tasking processor

▶ Max. I/O points:

DIO: Max. 4,352 points

AIO: Max. 544 channels

▶ Program capacity: Max. 256K steps
Data register: 64K words

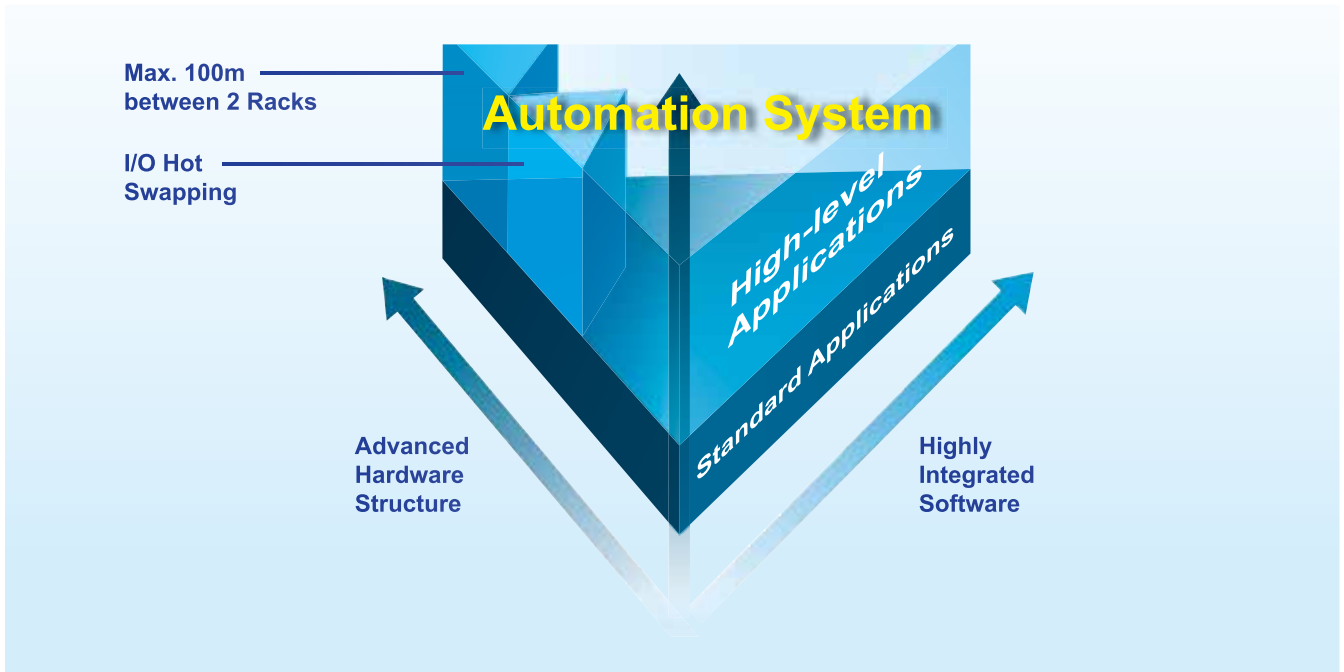
▶ Excellent program execution speed:
LD instruction execution speed: 0.1μs

▶ CPU built-in with fully isolated
RS-232/422/485, Mini-USB, Ethernet,
SD Card 1.0

▶ Abundant selection of DIO modules,
AIO modules, temperature measurement
modules, network modules, pulse-train
modules and DMCNET motion control
modules.

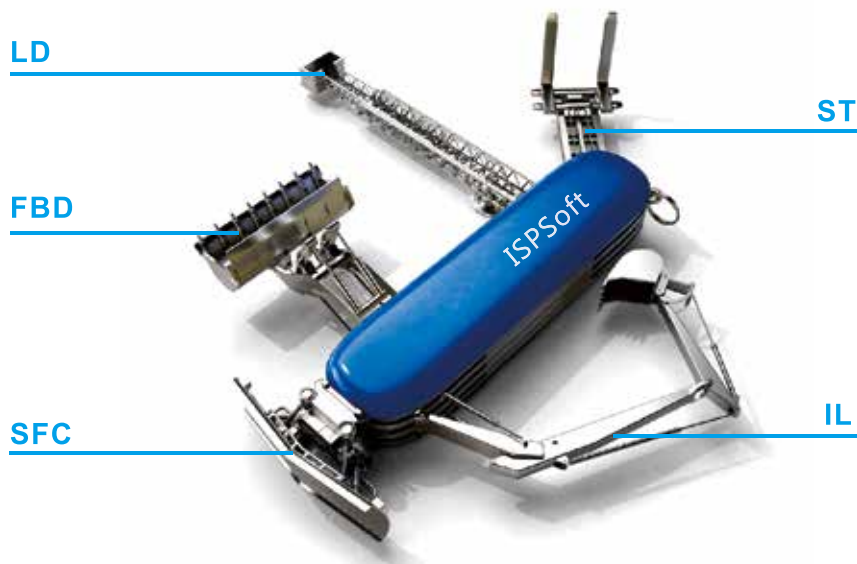


AH500 Series PLC – Automation System with Fully Integrated Hardware and Software Interfaces



Highly Integrated Software – Excellent Accessibility

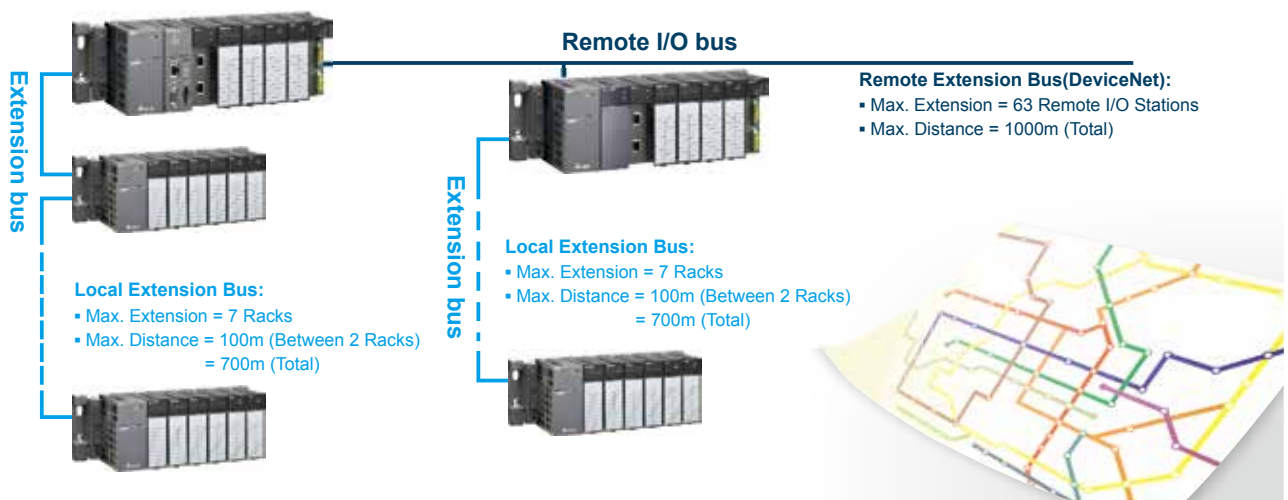
AH500 series PLCs adopt the highly accessible programming software ISPSOft, integrating the main functions that include control process programming, hardware configuration, network configuration, and providing a graphical interface for these functions. In addition, users of ISPSOft can choose their most 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 AH500 local extension rack can reach a maximum of 100m, greatly enhancing wiring flexibility. In addition, the AH500 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.



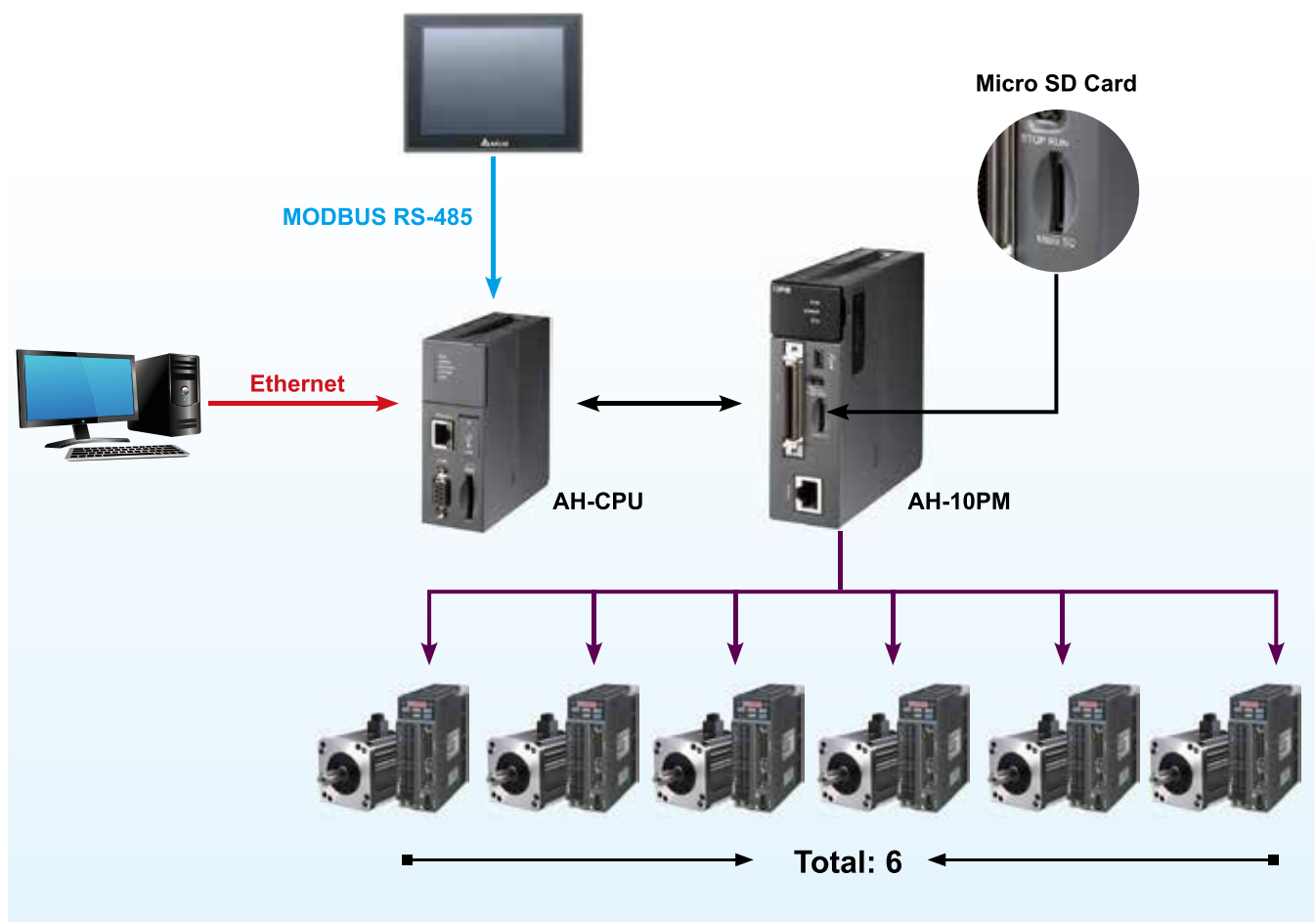
Motion Control Platform for Convenient Multi-axes Applications

Pulse train motion control module AH05PM/AH10PM

- ▶ AH05PM/AH10PM is designed to perform independent operations. It features a built-in CPU for programming and execution that greatly improves control efficiency.
- ▶ Execution speed: LD instruction @0.13μs
- ▶ Capacity: 64K steps
- ▶ Data register: D=10K words / W=64K words
- ▶ Motion Control Functions
 - > Controllable axis: 2 axes (AH05PM) / 6 axes (AH10PM)
 - > Supports UD/PD/AB/4AB modes and 1M Hz output
 - > Supports MPG inputs/E-Cam/G-code/2~6 axes linear interpolation/ 2 axes arc interpolation/3 axes helical interpolation (AH10PM)



MODBUS RS-485 System Control Structure

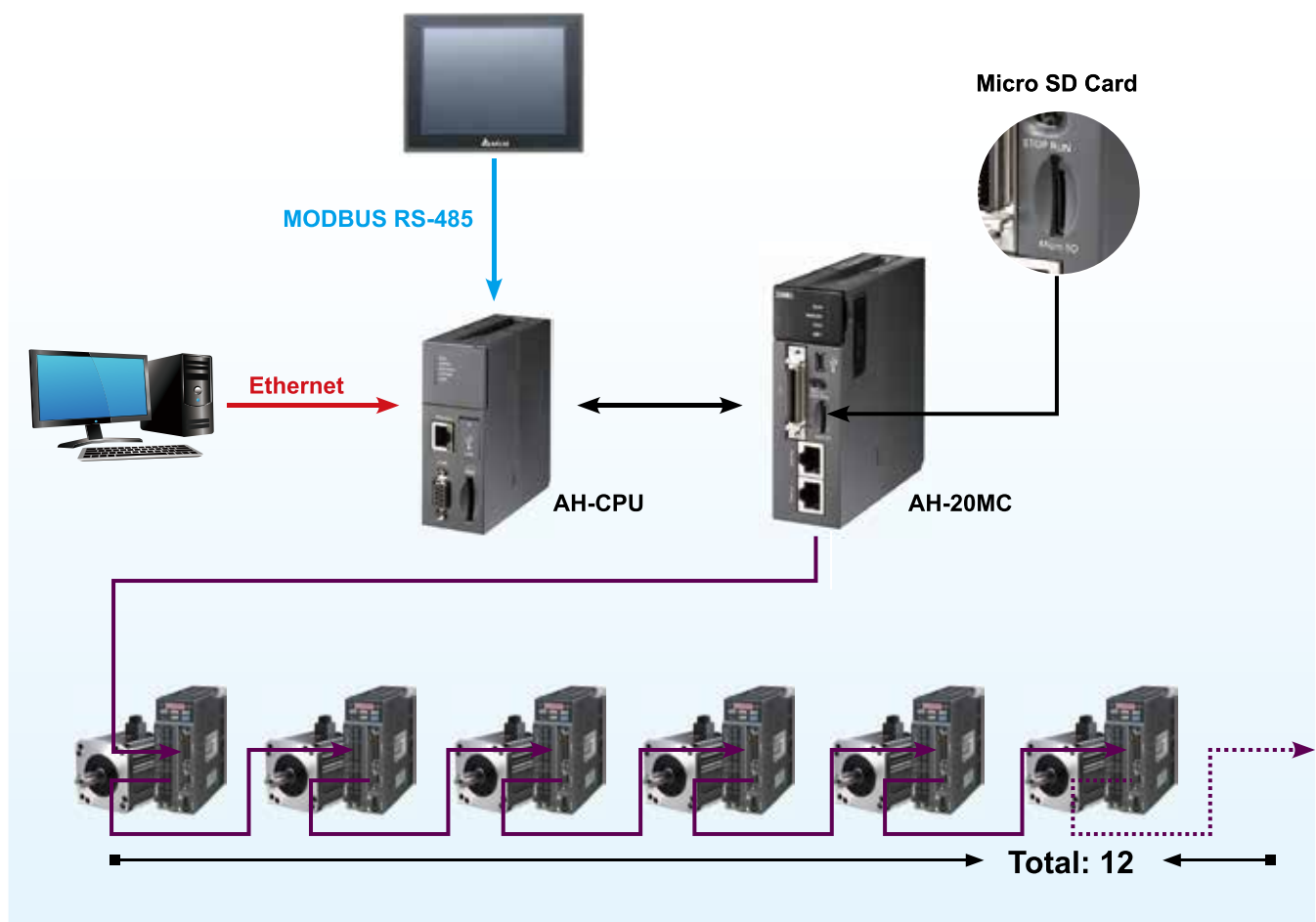


DMCNET communication motion control module AH20MC

- ▶ AH20MC is designed to perform independent operations. It features a built-in CPU for programming and execution that greatly improves control efficiency.
- ▶ Execution speed: LD instruction @0.13μs
- ▶ Capacity: 64K steps
- ▶ Data register: D=10K words / W=64K words
- ▶ Motion Control Functions
 - > Controllable axis: 12 axes
 - > Synchronous time: 12 axes @1ms
 - > Supports MPG inputs/E-Cam/G-code/2~6 axes linear interpolation/ 2 axes arc interpolation/3 axes helical interpolation



MODBUS RS-485 System Control Structure





Application Examples

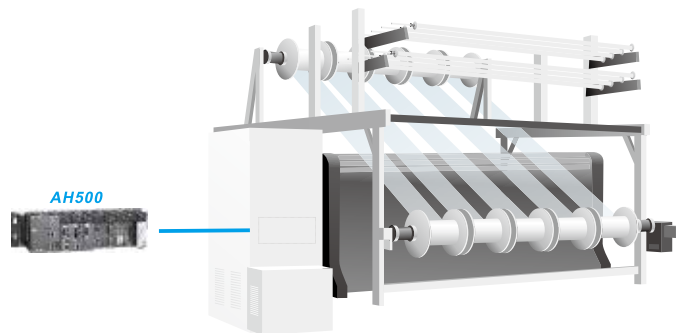
Large Scale Industrial Machines

The features of the AH500 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 AH500 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.

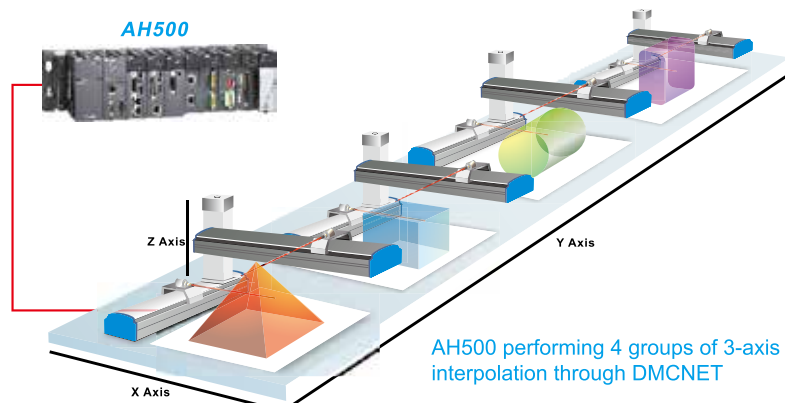
Building Material Processor



Warp Knitting Machine



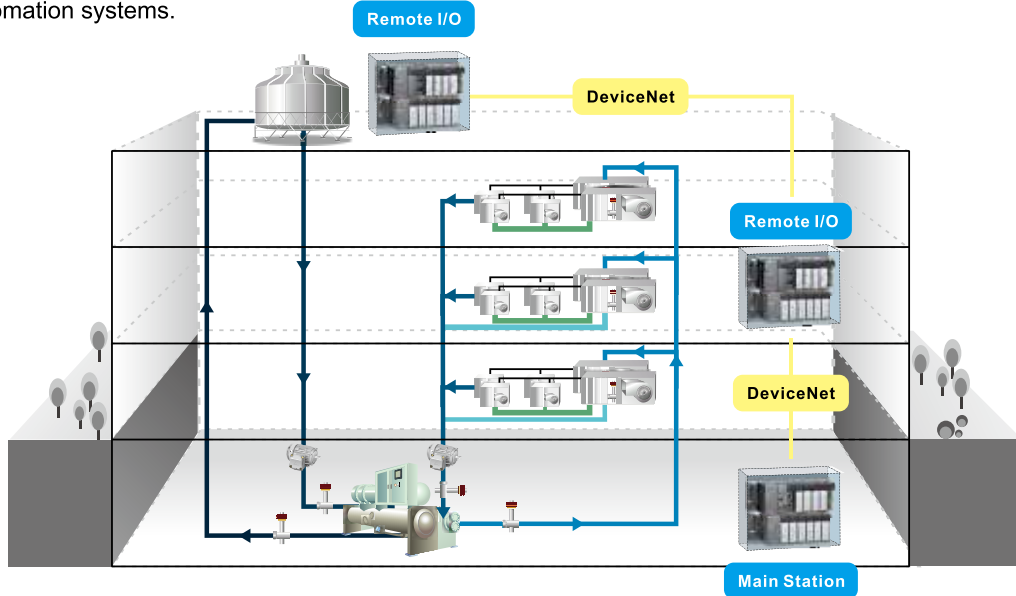
The AH500 also supports excellent motion control functions including 3-axis linear interpolation, 2-axis arc interpolation, and 3-axis helical interpolation. In addition, the AH500 is capable of controlling up to 12 axes or 4 groups of 3-axis interpolation synchronously through Delta's high speed motion control network DMCNET.



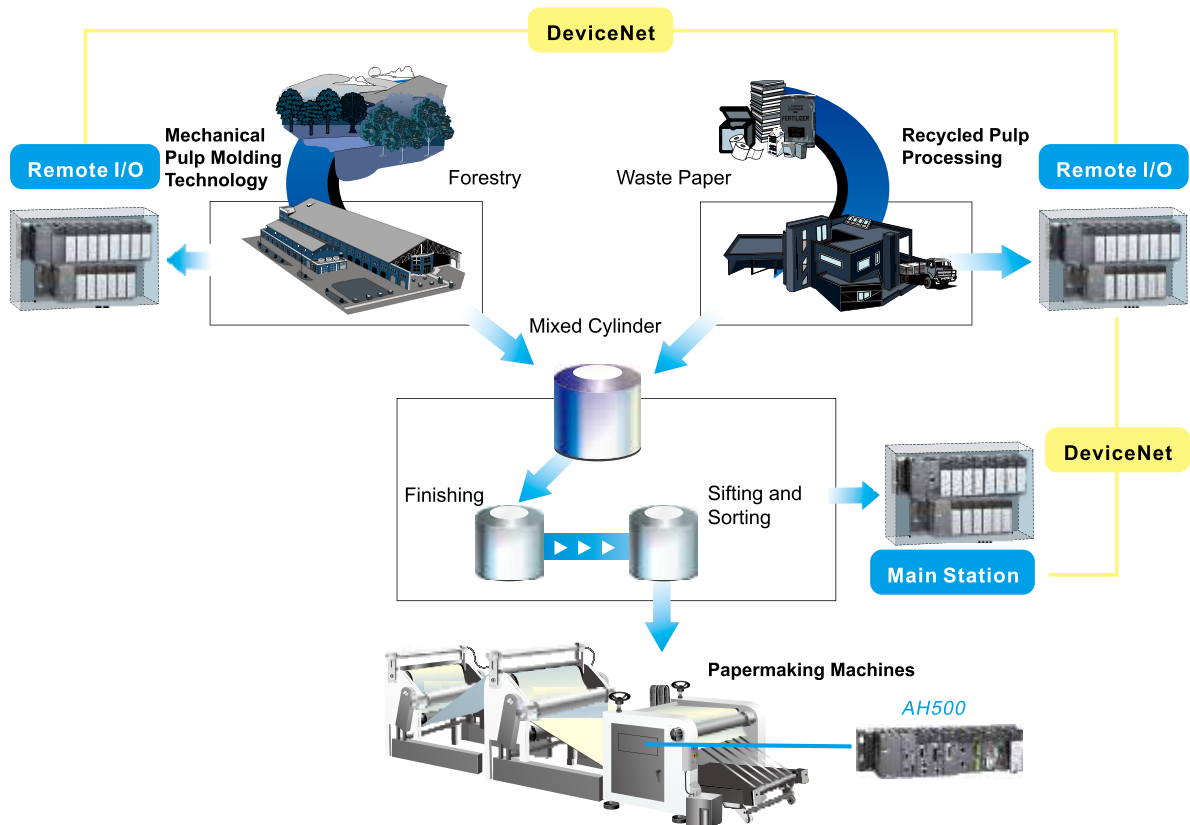
System Applications

The AH500 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 best solutions for all types of system integration requirements. Through the remote I/O expandability, you can build up the AH500 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 AH500 can not only fulfill the application requirements of industrial machines or devices, but it can also provide total solutions for automation systems.

HVAC

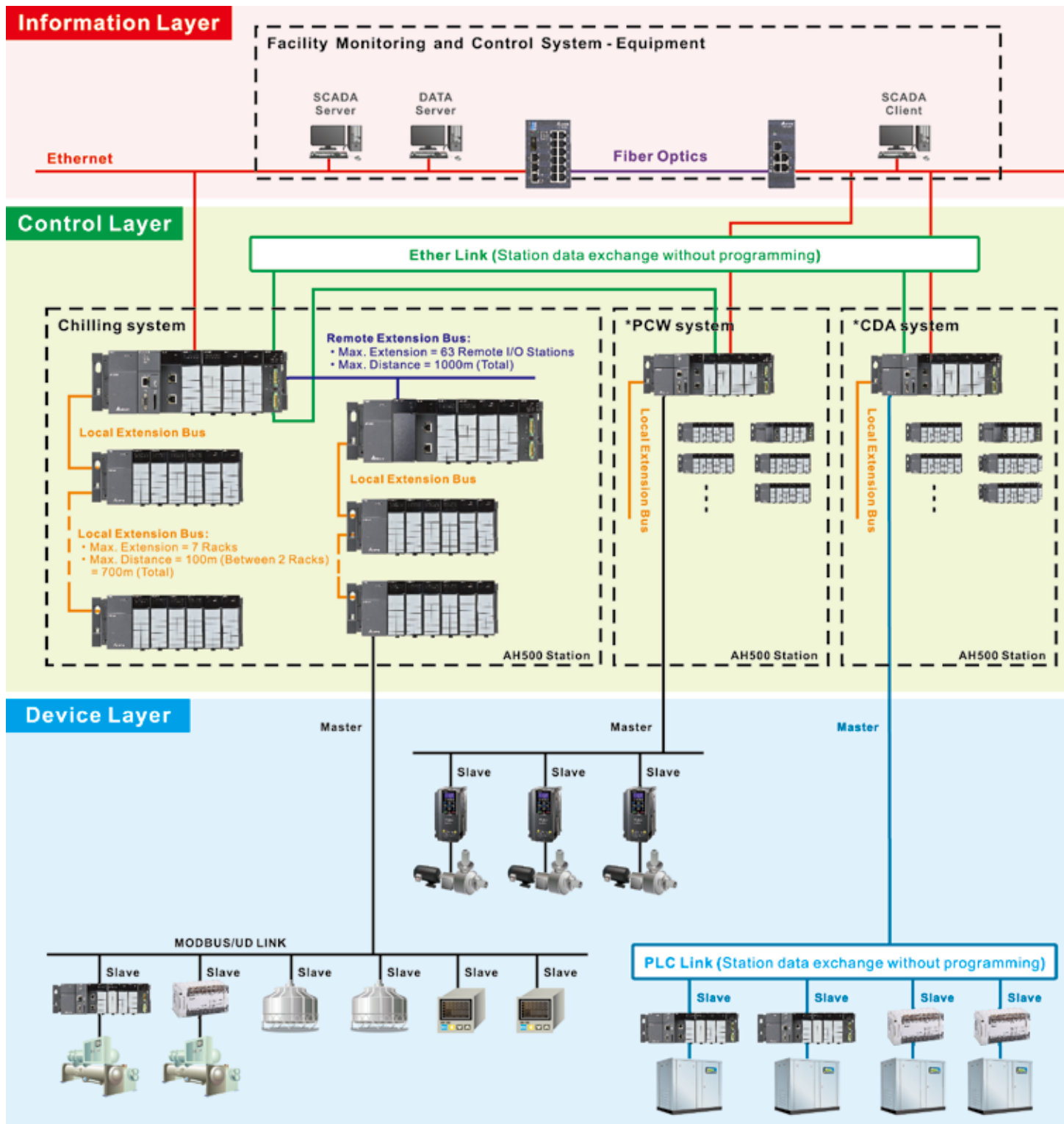


Papermaking Industries



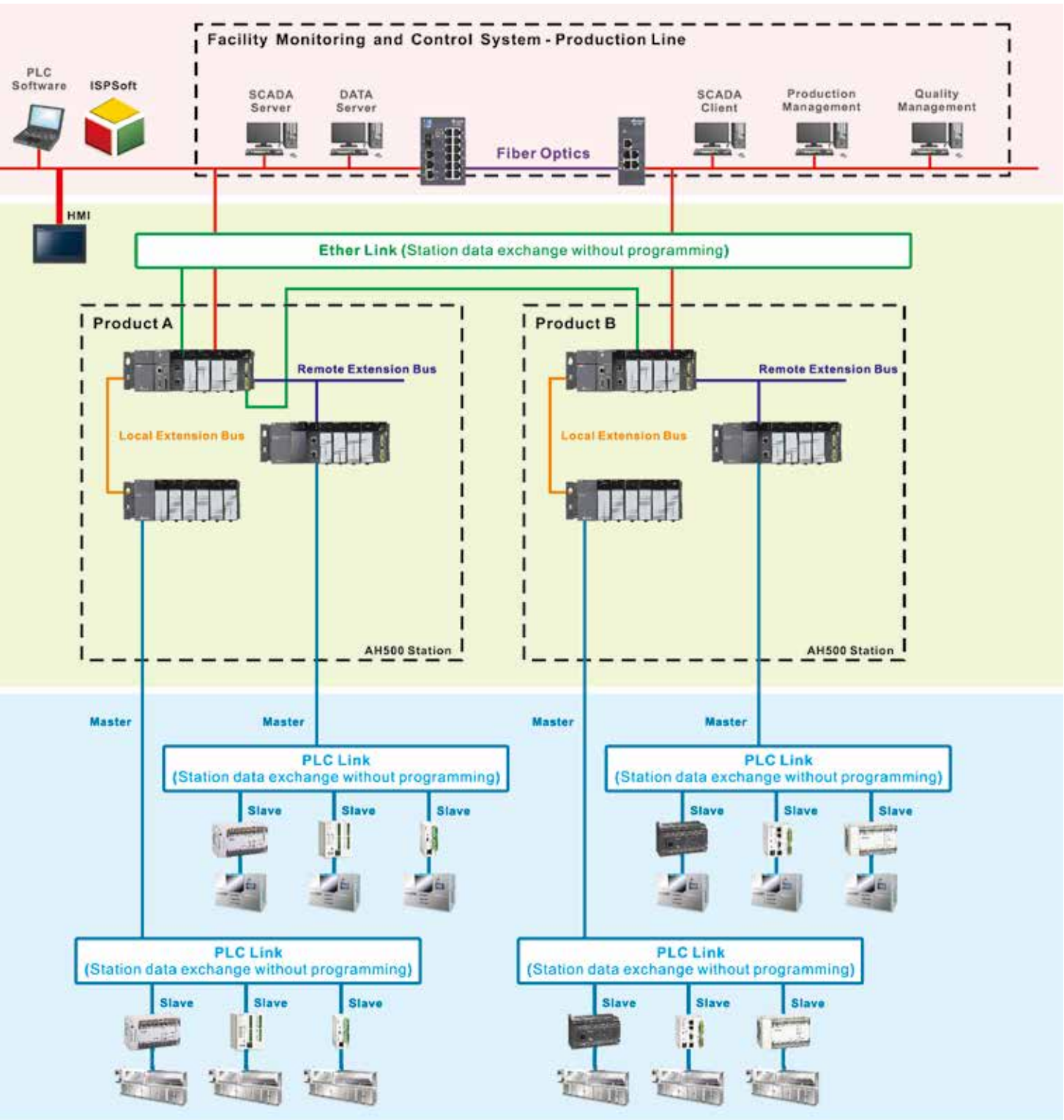
AH500 System Structure – Facility Monitoring and Control System

The system configuration of the AH500 is well demonstrated by the Facility Monitoring and Control System (FMCS). The AH500 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 AH500 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 AH500 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 device layer, control layer and information layer.

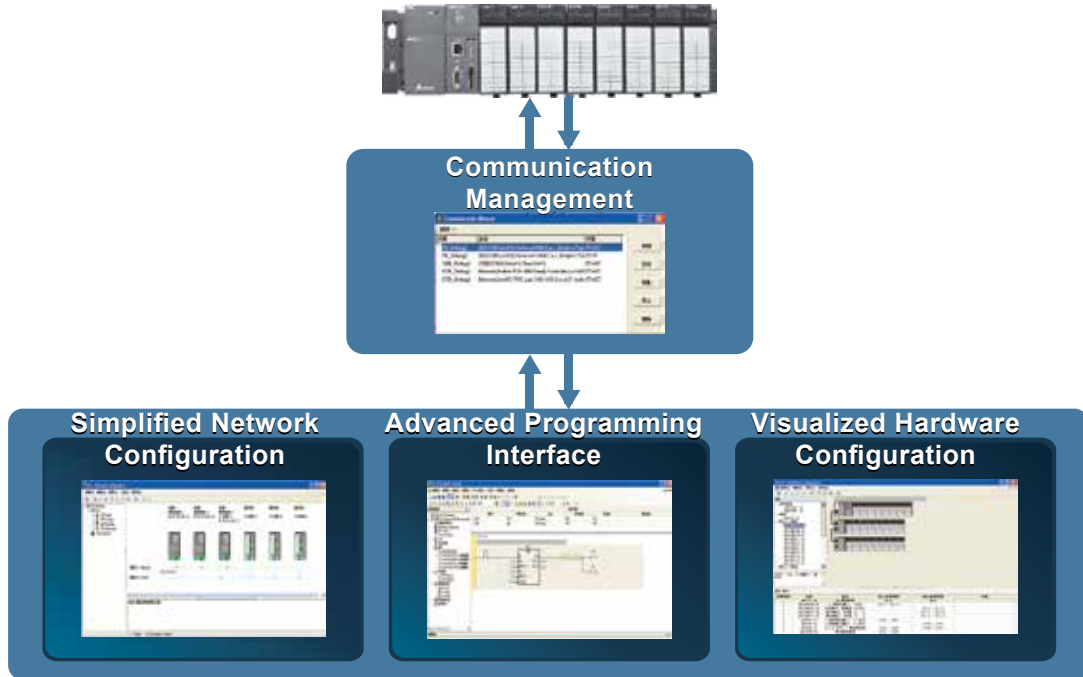


ISPSOft V2.0

Highly Accessible Programming Software

Fully Integrated Interface

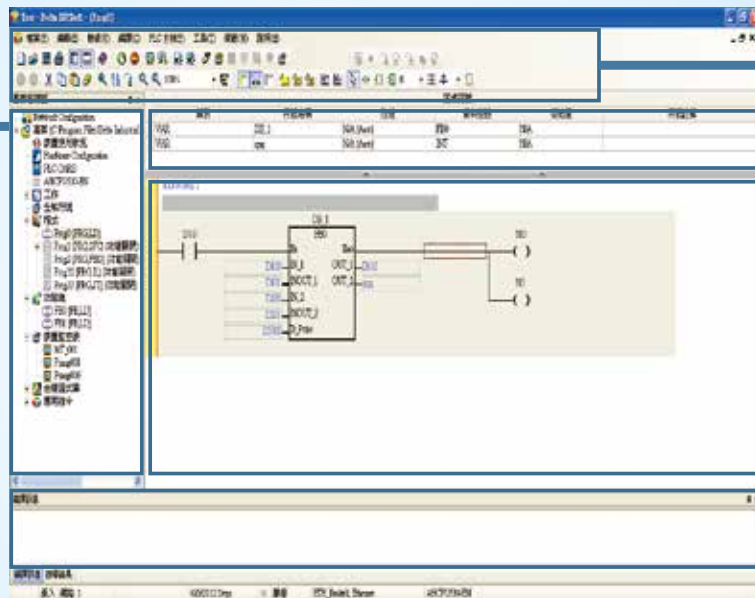
Advanced Programming Interface + Visualized Hardware Configuration + Simplified Network Configuration



Advanced Programming Interface

Project Management Window

- **New functions:** Network configuration, hardware configuration and PLC card.
- Supports 5 programming languages (LD/FBD/SFC/IL/ST) in both main program and FB.
- **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.
- **Delta Library:** Users can design frequently used instructions for specific applications in different industries.
- **Task:** Supports external interrupts and timer interrupts.



Toolbar

Symbol Table

Program Editing Area

Message Window

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.	Name	Description	Input Device Range	Output Device Range	Comments
0	AP00K-AA	AP Power Supply Module	Star	Star	
1	AP00KAB1-00	All I/Os CPU Station	Y00 - Y013	Y00 - Y013	
2	AP00KAB1-00	32 x DI, 16 x DO		Y00 - Y013	
3	AP00KAB1-00	32 x DI, 16 x DO		Y00 - Y013	
4	AP00KAB1-00	32 x DI, 16 x DO		Y00 - Y013	
5	AP00KAB1-00	32 x DI, 16 x DO		Y00 - Y013	
6	AP00KAB1-00	32 x DI, 16 x DO		Y00 - Y013	
7	AP00KAB1-00	32 x DI, 16 x DO		Y00 - Y013	

Simplified Network Configuration

192.168.1.11 Station 11 192.168.1.12 Station 12 192.168.1.13 Station 13

Ethernet

RS-485

Station 21 Station 22 Station 23

FMCS

Network Device Selection →

Toolbar

Network Configuration Area

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

Network Information

Ether Link

PLC Link

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.

Class	Identifiers	Address	Type	Initial	Comment
VAR	Axis_Scan		FFMC_Scan		FFMC對AGD-A2掃描
VAR	Axis_Enable		FFMC_Servo_Out		FFMC對AGD-A2輸出
VAR	Axis_UP		FFMC_InParameter		FFMC對AGD-A2輸入
VAR	Axis_RF		FFMC_ReadParam		FFMC對AGD-A2讀取

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

Single axis motion control

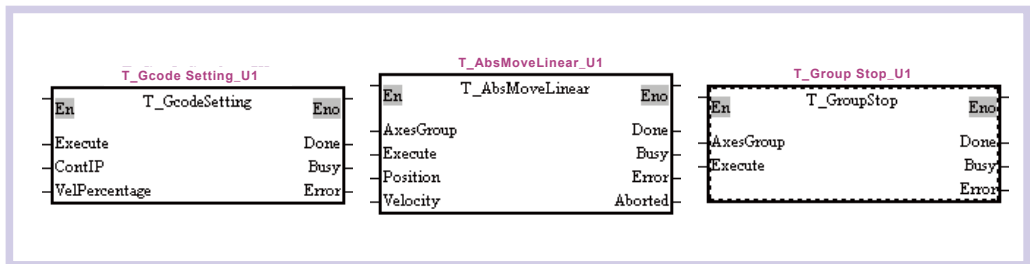
1	T_AbsSeg1
2	T_Jog
3	T_MPG
4	T_Axis Setting1
5	T_GearIn
6	T_HomeReturn

The diagram illustrates the configuration of six function blocks for single axis motion control:

- T_AbsSeg1_U1**: Absolute segment control block.
- T_Jog_U1**: Jog control block.
- T_MPG_U1**: MPG (Manual Pulse Generator) control block.
- T_Axis Setting1_U1**: Axis setting control block.
- T_GearIn_U1**: Gear-in control block.
- T_HomeReturn_U1**: Home return control block.

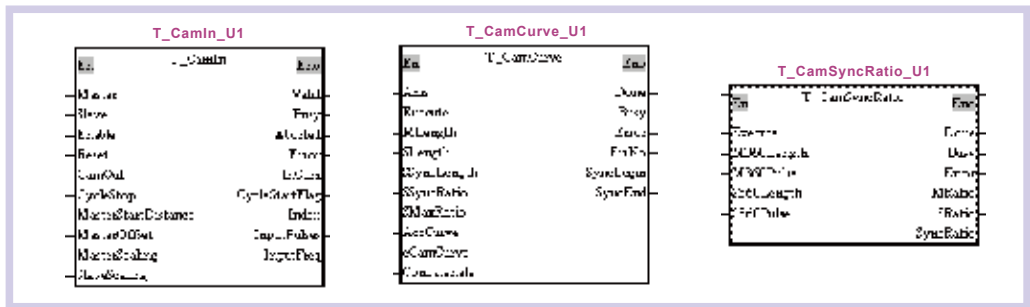
Multi-axis motion control

- 1 T_Gcode Setting
- 2 T_AbsMoveLinear
- 3 T_Group Stop



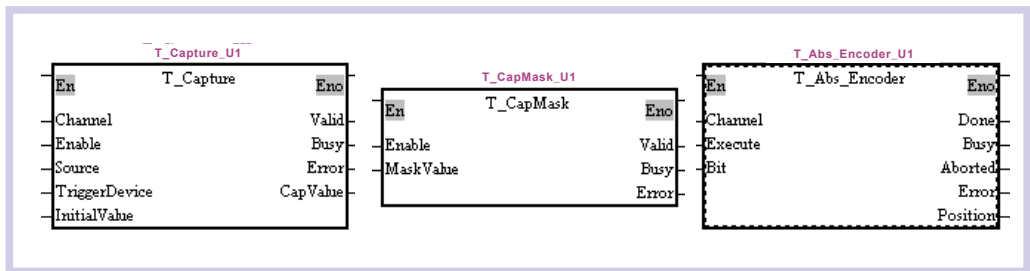
E-Cam motion control

- 1 T_CamIn
- 2 T_CamCurve
- 3 T_CamSyncRatio



Other motion control

- 1 T_Capture
- 2 T_CapMask
- 3 T_Abs_Encoder



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

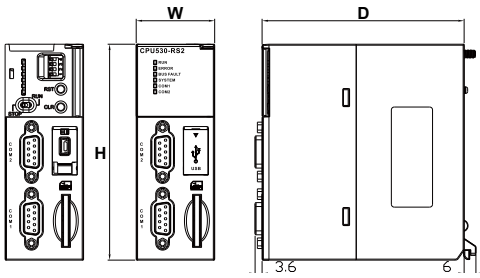
Editing Area

- Data exchange setup
- Status display

Dimensions Unit: mm

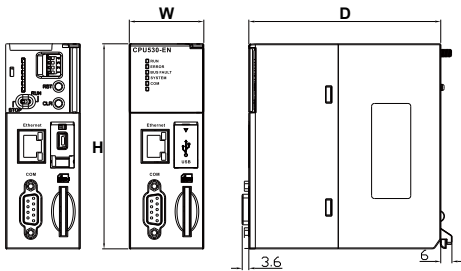
CPU Modules

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



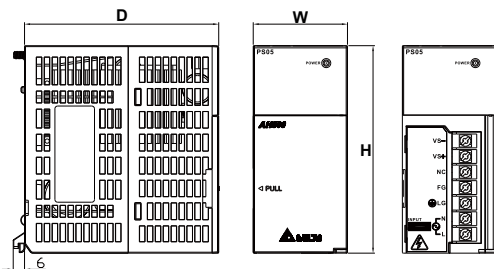
CPU Modules

Model name	H	W	D
AHCPU500-EN	110	40	103
AHCPU510-EN	110	40	103
AHCPU520-EN	110	40	103
AHCPU530-EN	110	40	103



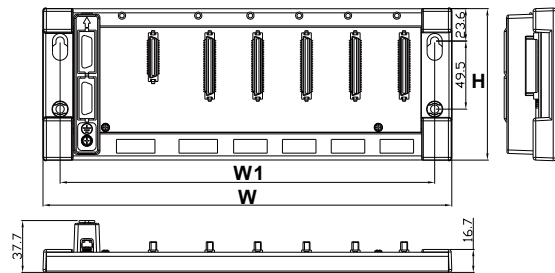
Power Supply Modules

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



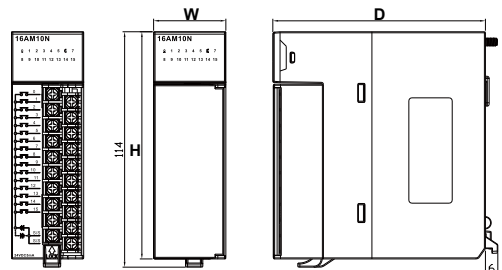
Backplanes

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
AHBP06E1-5A	110	328	303
AHBP08E1-5A	110	399	374



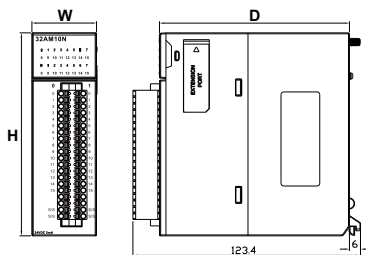
16-point Digital I/O Modules

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



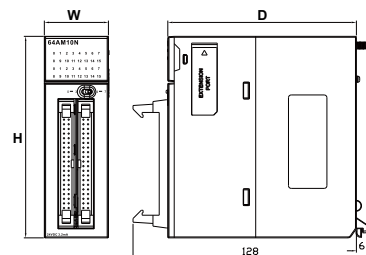
32-point Digital I/O Modules

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



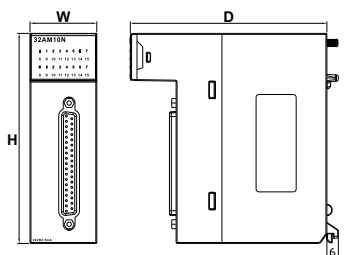
64-point Digital I/O Modules

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



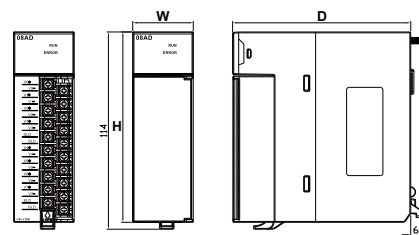
32-point Digital I/O Modules

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



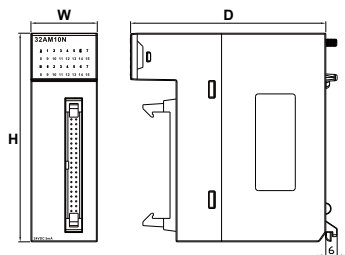
Analog I/O Modules

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



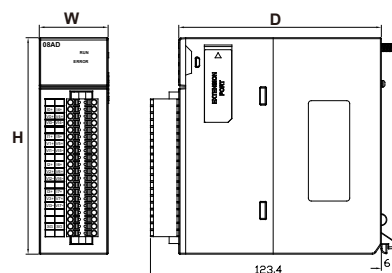
32-point Digital I/O Modules

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



Analog I/O Modules

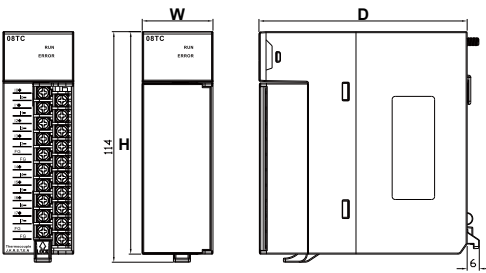
Model name	H	W	D
AH08AD-5A	110	35	103
AH08DA-5A	110	35	103



Dimensions Unit: mm

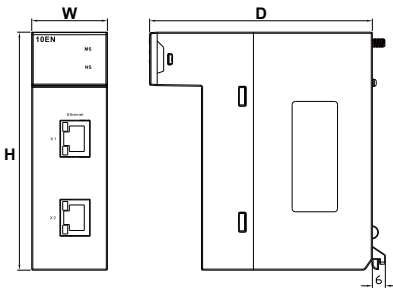
Temperature Measurement Modules

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



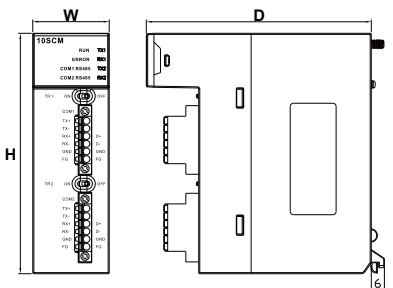
Network Module

Model name	H	W	D
AH10EN-5A	110	35	103



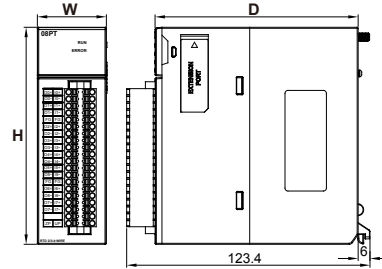
Network Module

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



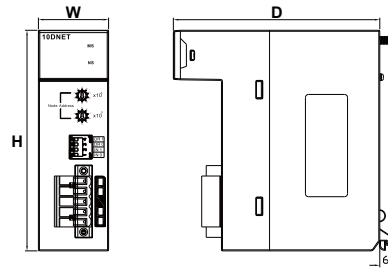
Temperature Measurement Module

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



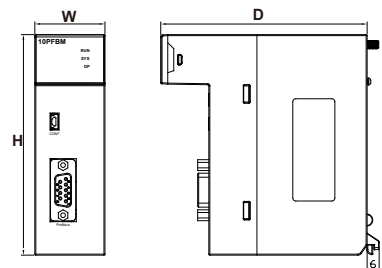
Network Module

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



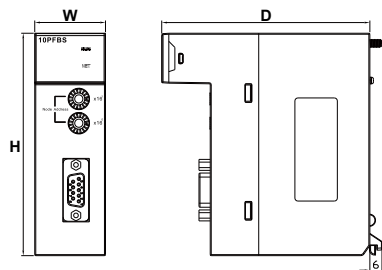
Network Module

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



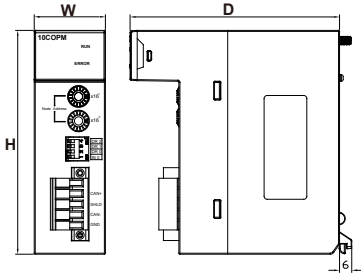
Network Module

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



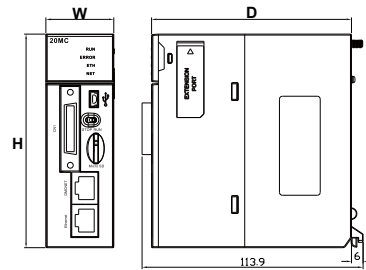
Network Module

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



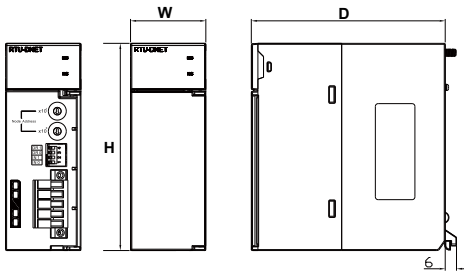
Motion Control Module

Model name	H	W	D
AH20MC-5A	110	35	103



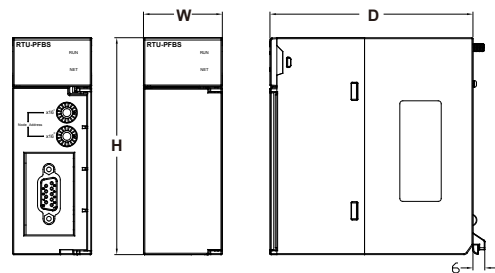
RTU Module

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



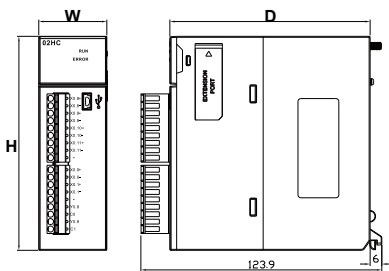
RTU Module

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



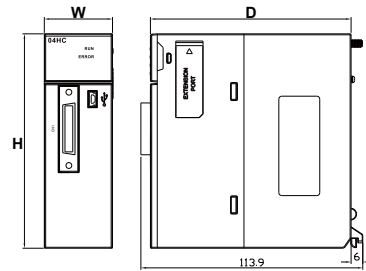
Motion Control Module

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



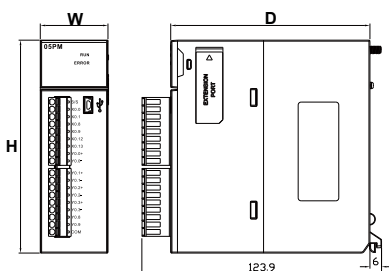
Motion Control Module

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



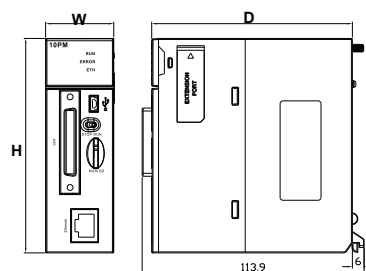
Motion Control Module

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



Motion Control Modules

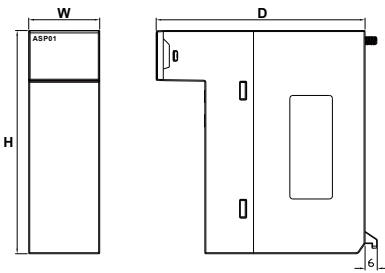
Model name	H	W	D
AH10PM-5A	110	35	103
AH15PM-5A	110	35	103



Dimensions Unit: mm

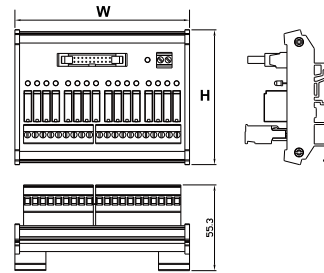
Space Module

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



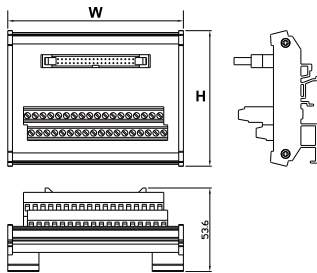
External Terminal Modules

Model name	H	W
DVPAETB-OR16A	87	113
DVPAETB-OR16B	87	113



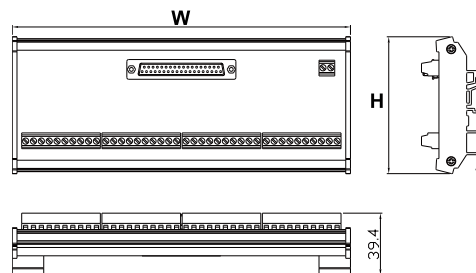
External Terminal Modules

Model name	H	W
DVPAETB-ID32A	87	113
DVPAETB-OT32A	87	113



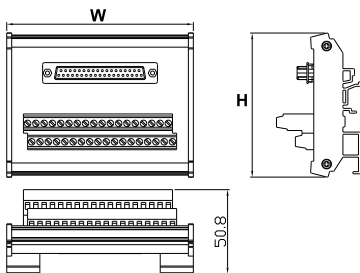
External Terminal Modules

Model name	H	W
DVPAETB-OR32A	87	215
DVPAETB-OR32B	87	215



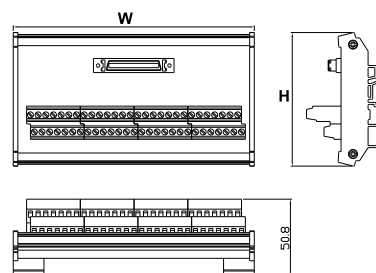
External Terminal Modules

Model name	H	W
DVPAETB-ID32B	87	113
DVPAETB-OT32B	87	113



External Terminal Modules

Model name	H	W
DVPAETB-IO16C	87	125
DVPAETB-IO24C	87	157
DVPAETB-IO34C	87	157

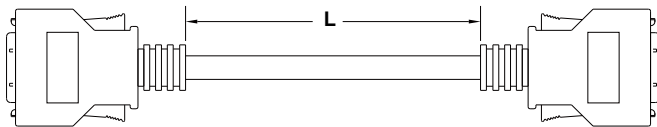


Dimensions

Unit: m

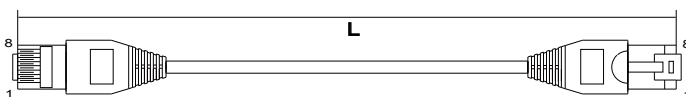
Cables (HDC)

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	AHACABI0-5A	90.0
AHACABA5-5A	15.0	AHACABJ0-5A	100.0
AHACABB0-5A	20.0	DVPACAB7D10	1.0
AHACABC0-5A	30.0	DVPACAB7E10	1.0



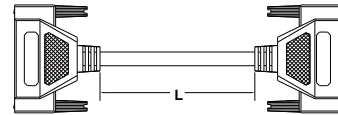
Cables (RJ45)

Model name	L	Model name	L
TAP-CB03	0.3	TAP-CB20	2.0
TAP-CB05	0.5	TAP-CB30	3.0
TAP-CB10	1.0	TAP-CB100	10.0



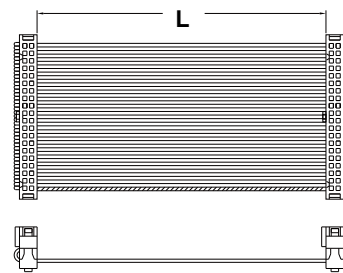
Cable (DB37)

Model name	L
DVPACAB7C10	1.0



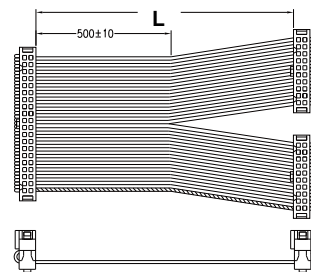
Cable (Latched connector)

Model name	L
DVPACAB7A10	1.0



Cable (Latched connector)

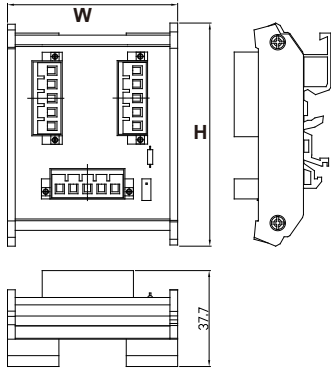
Model name	L
DVPACAB7B10	1.0



Dimensions Unit: mm

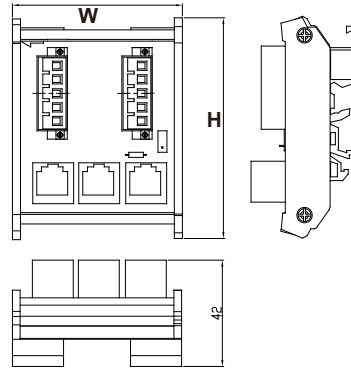
CANopen Distribution Box

Model name	H	W
TAP-CN01	87	66.5



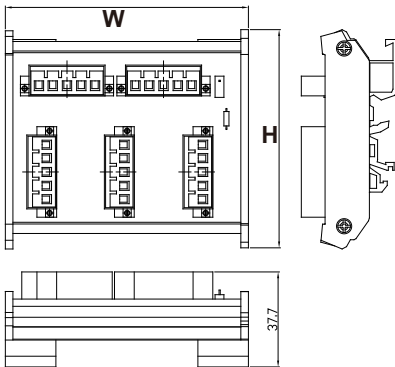
CANopen Distribution Box

Model name	H	W
TAP-CN03	87	66.5



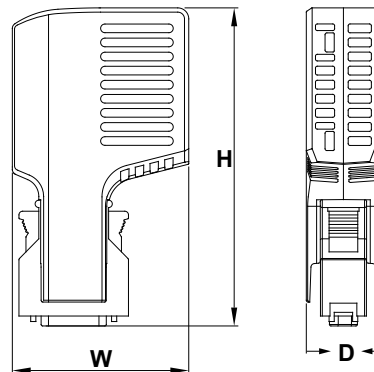
CANopen Distribution Box

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





Ordering Information

CPU Modules



Model	Local I/O points	Program capacity	Data register D/L/B (note)	Function blocks	Extension backplane	Power consumption (Internal)	Specifications	Certificates
AHCPU500-RS2	768	32K steps (128KB)	16K / 16K / 512K words	128	0	2w	<ul style="list-style-type: none"> Built-in RS-232/422/485 multi-modes communication port x 2 (RS-232:115.2kbps/RS-422/485: 921.6kbps) Built-in SD card slot (supports max. 2GB) Built-in Mini-USB programming port Program execution speed: LD instruction @ 0.1µs / 1K steps @ 0.3ms System diagnose / status light /online editing and debug functions PLC Link automatic data exchange function MODBUS RTU/ASCII LD/SFC/FBD/IL/ST languages 256 interrupts (Timed/IO/External/Low voltage/Communication) 2048 timers and counters No battery required RTC function (max. 30 days after power off) 	 
AHCPU510-RS2	1280	64K steps (256KB)	32K / 32K / 1024K words	256	1	2w		
AHCPU520-RS2	2304	128K steps (512KB)	64K / 64K / 2048K words	512	3	2w		
AHCPU530-RS2	4352	256K steps (1MB)	64K / 64K / 4096K words	1024	7	2w		
AHCPU500-EN	768	32K steps (128KB)	16K / 16K / 512K words	128	0	2w		
AHCPU510-EN	1280	64K steps (256KB)	32K / 32K / 1024K words	256	1	2w		
AHCPU520-EN	2304	128K steps (512KB)	64K / 64K / 2048K words	512	3	2w		
AHCPU530-EN	4352	256K steps (1MB)	64K / 64K / 4096K words	1024	7	2w		

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

Main Backplanes


Model	Slot	Power consumption (Internal)	Specifications	Certificates
AHBP04M1-5A	4	0.01w	<ul style="list-style-type: none"> Supports CPU modules Supports remote IO communication modules (RTU) Built-in communication port for extension backplanes Slot spaces are not occupied by Power/CPU/RTU modules 	 
AHBP06M1-5A	6	0.01w		
AHBP08M1-5A	8	0.01w		
AHBP12M1-5A	12	0.01w		

Extension Backplanes



Model	Slot	Power consumption (Internal)	Specifications	Certificates
AHBP06E1-5A	6	1.41w	<ul style="list-style-type: none"> For main backplane extension Built-in communication port for extension backplanes Slot spaces are not occupied by power modules 	 
AHBP08E1-5A	8	1.41w		

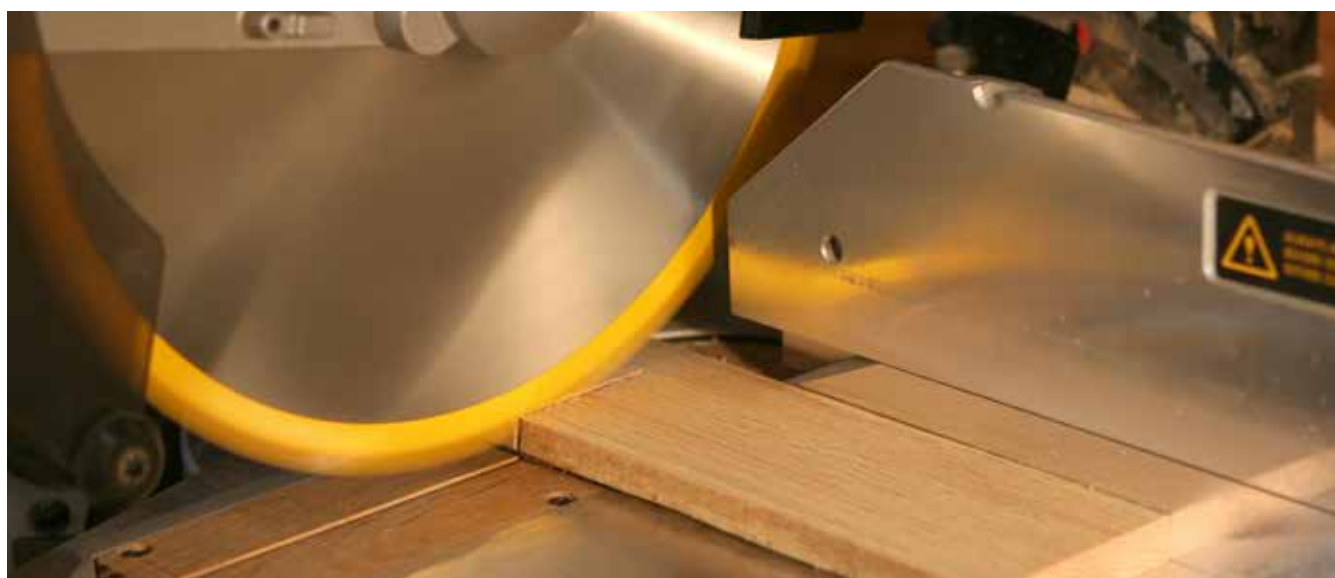
Ordering Information

Power Supply Modules





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

Digital I/O Modules (Input)



Model	Points	Signals	Terminal block type	Power consumption (Internal / External)	Accessories (optional)	Specifications	Certificates
AH16AM10N-5A	16	24VDC 5mA	JIS removable terminal block	0.1w / 1.9w	-	<ul style="list-style-type: none"> PNP/NPN mixed mode design Supports hot-swapping function Individual LED status indicator 	
AH16AM30N-5A	16	120~240VAC 4.5~9mA	JIS removable terminal block	0.1w / -	-		
AH32AM10N-5A	32	24VDC 5mA	EU removable terminal block	0.2w / 3.8w	-		
AH32AM10N-5B	32	24VDC 5mA	DB37	0.2w / 3.8w	DVPACAB7C10 x 1 DVPAETB-ID32B x 1		
AH32AM10N-5C	32	24VDC 5mA	Latched connector	0.2w / 3.8w	DVPACAB7A10 x 1 DVPAETB-ID32A x 1		
AH64AM10N-5C	64	24VDC 3.2mA	Latched connector	0.2w / 4.9w	DVPACAB7A10 x 2 DVPAETB-ID32A x 2	<ul style="list-style-type: none"> PNP/NPN mixed mode design Supports hot-swapping function Individual LED status indicator (32 points) 	
New AH16AR10N-5A	16	24VDC 5mA	JIS removable terminal block	0.5w / 1.9w	-	<ul style="list-style-type: none"> PNP/NPN mixed mode design Supports hot-swapping function Individual LED status indicator Supports I/O interrupts Supports rising/falling-edge trigger modes Supports signal time-delay setting for 0.1/0.5/3/15/20 ms 	



Digital I/O Modules (Output)



Model	Points	Signals	Terminal block type	Power consumption (Internal / External)	Accessories (optional)	Specifications	Certificates
AH16AN01R-5A	16	Relay 240VAC/24VDC 2A	JIS removable terminal block	2.1w / -	-	<ul style="list-style-type: none"> Supports hot-swapping function Individual LED status indicator Supports keep-last-value function when CPU shuts down 	 
AH16AN01T-5A	16	NPN (Sink) 12~24VDC 0.5A	JIS removable terminal block	0.2w / 0.4w	-		
AH16AN01P-5A	16	PNP (Source) 12~24VDC 0.5A	JIS removable terminal block	0.2w / 0.4w	-		
AH16AN01S-5A	16	TRIAC 120/240VAC 0.5A	JIS removable terminal block	0.6w / -	-		
AH32AN02T-5A	32	NPN (Sink) 12~24VDC 0.1A	EU removable terminal block	0.4w / 0.8w	-		
AH32AN02P-5A	32	PNP (Source) 12~24VDC 0.1A	EU removable terminal block	0.4w / 0.8w	-		
AH32AN02T-5B	32	NPN (Sink) 12~24VDC 0.1A	DB37	0.4w / 0.8w	(DVPACAB7C10 x 1 DVPAETB-OR32A x 1) or (DVPACAB7C10 x 1 DVPAETB-OT32B x 1)		
AH32AN02P-5B	32	PNP (Source) 12~24VDC 0.1A	DB37	0.4w / 0.8w	(DVPACAB7C10 x 1 DVPAETB-OR32B x 1) or (DVPACAB7C10 x 1 DVPAETB-OT32B x 1)		
AH32AN02T-5C	32	NPN (Sink) 12~24VDC 0.1A	Latched connector	0.4w / 0.8w	(DVPACAB7B10 x 1 DVPAETB-OR16A x 2) or (DVPACAB7A10 x 1 DVPAETB-OT32A x 1)		
AH32AN02P-5C	32	PNP (Source) 12~24VDC 0.1A	Latched connector	0.4w / 0.8w	(DVPACAB7B10 x 1 DVPAETB-OR16B x 2) or (DVPACAB7A10 x 1 DVPAETB-OT32A x 1)		
AH64AN02T-5C	64	NPN (Sink) 12~24VDC 0.1A	Latched connector	0.6w / 1.5w	(DVPACAB7B10 x 2 DVPAETB-OR16A x 4) or (DVPACAB7A10 x 2 DVPAETB-OT32A x 2)	<ul style="list-style-type: none"> Supports hot-swapping function Individual LED status indicator (32 points) Supports keep-last-value function when CPU shuts down 	 
AH64AN02P-5C	64	PNP (Source) 12~24VDC 0.1A	Latched connector	0.6w / 1.5w	(DVPACAB7B10 x 2 DVPAETB-OR16B x 4) or (DVPACAB7A10 x 2 DVPAETB-OT32A x 2)		

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	24VDC 5mA	Relay 240VAC/24VDC 2A	JIS removable terminal block	1.1w / -	<ul style="list-style-type: none"> PNP/ NPN mixed mode design Supports hot-swapping function Individual LED status indicator Supports keep-last-value function when CPU shuts down 	 
AH16AP11T-5A	8	8	24VDC 5mA	NPN (Sink) 12~24VDC 0.5A	JIS removable terminal block	0.2w / 0.2w		
AH16AP11P-5A	8	8	24VDC 5mA	PNP (Source) 12~24VDC 0.5A	JIS removable terminal block	0.2w / 0.2w		

Ordering Information



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"> Hardware resolution: 16-bit Conversion time: 150 μs/channel Base error (ambient temp.): Voltage mode ±0.1% Current mode ±0.1% Base error (full temp. range): Voltage mode ±0.45% Current mode ±0.2% Linearity error (ambient temp.): Voltage mode ±0.07% Current mode ±0.05% Linearity error (full temp. range): Voltage mode ±0.12% Current mode ±0.23% Supports hot-swapping function Isolated signal design Diagnose function Module status LED indicator Supports interrupt function 	 
New 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"> Hardware resolution: 16-bit Conversion time: 150 μs/channel Base error (ambient temp.): Voltage mode ±0.02% Current mode ±0.06% Base error (full temp. range): Voltage mode ±0.04% Current mode ±0.07% Linearity error (ambient temp.): Voltage mode ±0.004% Current mode ±0.01% Linearity error (full temp. range): Voltage mode ±0.004% Current mode ±0.01% Supports hot-swapping function Isolated signal design Diagnose function Module status LED indicator Supports interrupt function Supports keep-last-value function when CPU shuts down 	 
New 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"> Hardware resolution: 16-bit Conversion time: 150μs/channel Input accuracy: same as AH04AD-5A Output accuracy: same as AH04DA-5A Supports hot-swapping function Isolated signal design Diagnose function Module status LED indicator Supports interrupt function Supports keep-last-value function when CPU shuts down 	 

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: 150ms/channel 3-wire: 300ms/channel	JIS removable terminal block	2w / -	<ul style="list-style-type: none"> Effective resolution: 16-bit Accuracy: ±0.6% (Full Scale) Supports hot-swapping function Signal isolated design Diagnose function PID function Module status LED indicator Supports interrupt function Supports disconnection detection function Fully isolated channel design (AH08PTG-5A) 	
AH04TC-5A	4	Thermocouple input J,K,R,S,T,E,N, ±150mV	0.1°C / 0.1°F	200ms/channel	JIS removable terminal block	1.5w / -		
AH08TC-5A	8	Thermocouple input J,K,R,S,T,E,N, ±150mV	0.1°C / 0.1°F	200ms/channel	JIS removable terminal block	1.5w / -		
New 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: 20ms (fast)~100ms (normal)/channel 3-wire:200ms/channel	EU removable terminal block	0.7w / 4w		

Network Modules



Model	Power consumption (Internal / External)	Specifications	Certificates
AH10EN-5A	1.6w / -	<ul style="list-style-type: none"> Ethernet communication module (Master/Slave) 100Mbps communication port x 2 (switch function available) Ether Link function MODBUS TCP function 	<ul style="list-style-type: none"> Automatic data exchange function NTP network time correction function SNMP/E-mail/IP Filter function <ul style="list-style-type: none"> Supports user defined communication format (UD Link) MODBUS RTU/ASCII function available Supports automatic data exchange function Supports BACnet Slave function <ul style="list-style-type: none"> Supports hot-swapping function Diagnose function Module status LED indicator
AH10SCM-5A	1.2w / -	<ul style="list-style-type: none"> Serial communication module (Master/Slave) Full isolation design in power & signal circuits Built-in RS-422/485 with communication port x 2 (multiple modes, 460.8Kkbps) Supports PLC Link function 	
AH10DNET-5A	0.9w / 0.72w	<ul style="list-style-type: none"> DeviceNet communication module (Master/Slave) Supports max. speed of 1Mbps Switchable between master and slave modes 	
New AH10PFBS-5A	2w / -	<ul style="list-style-type: none"> PROFIBUS-DP master module Supports DPV0/DPV1 Max. speed: 12Mbps 	
AH10PFBS-5A	1w / -	<ul style="list-style-type: none"> PROFIBUS-DP slave module Supports DPV0/DPV1 Max. speed: 12Mbps 	
New AH10COPM-5A	1w / -	<ul style="list-style-type: none"> CANopen module (Master/Slave) Max. speed: 1Mbps Connects up to 100 slaves in master mode 	

Remote I/O Modules

Model	Power consumption (Internal / External)	Specifications	Certificates
AHRTU-DNET-5A	0.75w / 0.72w	<ul style="list-style-type: none"> DeviceNet remote I/O module Supports max. speed of 1Mbps Supports AH500 DIO modules, AIO modules, temperature measurement modules, and the serial communication module AH10SCM 	<ul style="list-style-type: none"> Installing on the main backplane required Supports up to 7 extension racks Diagnose function Module status LED indicator <ul style="list-style-type: none"> Supports 7 extension backplanes Diagnose function Module status LED indicator Configurable I/O capacity: 122 words for input / 122 words for output
New AHRTU-PFBS-5A	1.9w / -	<ul style="list-style-type: none"> PROFIBUS-DP remote I/O module Max. speed: 12Mbps Supports AH500 digital I/O modules, analog I/O modules, temperature measurement modules Installs on main backplane 	

Ordering Information






Motion Control Modules

Model	Terminal block type	Power consumption (Internal)	Accessories (optional)	Specifications	Certificates
AH02HC-5A	EU removable terminal block	2.4w	-	<ul style="list-style-type: none"> 2 high speed counter channels 	 
AH04HC-5A	HDC	2.4w	DVPACAB7D10 DVPAETB-IO16C	<ul style="list-style-type: none"> 4 high speed counter channels 	
AH05PM-5A	EU removable terminal block	2.7w	-	<ul style="list-style-type: none"> 2-axis pulse train motion control module Supports 1MHz output Supports 2-axis linear interpolation, 2-axis arc interpolation 	
AH10PM-5A	HDC	2.7w	DVPACAB7E10 DVPAETB-IO24C	<ul style="list-style-type: none"> 6-axis pulse train motion control module Supports 1MHz output (4 axes) 200K Hz output (2 axes) Supports 2~6 axis linear interpolation, 2-axis arc interpolation and 3-axis helical interpolation Built in Ethernet communication port Supports Micro SD card 	
New AH15PM-5A	HDC	2.7w	DVPACAB7E10 DVPAETB-IO34C	<ul style="list-style-type: none"> 4-axis pulse type motion control module Supports 1MHz output Supports 2~4-axis linear interpolation, 2-axis arc interpolation, 3-axis helical interpolation Built in Ethernet communication port Supports Micro SD card Supports limit switch 	
AH20MC-5A	HDC	3w	DVPACAB7D10 DVPAETB-IO16C	<ul style="list-style-type: none"> 12-axis DMCNET communication motion control module (10Mbps) 12 axes synchronization in 1ms Supports 2~6 axes linear interpolation, 2-axis arc interpolation and 3-axis helical interpolation Built in Ethernet communication port Supports Micro SD card 	

Software

Software	Model	License	Descriptions	Compatible Products
ISPSoft [V2]	-	Free	PLC programming software	AH500 series, DVP series PLCs
COMMGR [V1]	-	Free	Communication management software	AH500 series, DVP series PLCs
PMSOFT [V2]	-	Free	Motion control programming software	AH500 series, DVP series motion controllers
DCISOFT [V1]	-	Free	Ethernet configuration software	AH500 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	AH500 series DeviceNet modules, DVP series DeviceNet modules, CMC series DeviceNet cards for Delta motor drives
CANopen Builder [V2]	-	Free	CANopen configuration software	AH500 series CANopen modules, DVP series built-in CANopen PLCs, DVP series CANopen modules, DVP10MC motion controller
SYCON.net [V2]	-	Free	PROFIBUS DP configuration software	AH500 series PROFIBUS DP modules
New Delta OPC [V1]	HASP-20-OPC01	Hardware license (USB)	Delta OPC server	AH500 series PLCs

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			
	AHACABI0-5A	90.0m			
	AHACABJ0-5A	100.0m			
	I/O extension cable for connecting external terminal modules	DVPACAB7A10	1.0m / Latched connector	AH32AM10N-5C / AH32AN02T-5C / AH32AN02P-5C / AH64AM10N-5C / AH64AN02T-5C / AH64AN02P-5C	
		DVPACAB7B10	1.0m / Latched connector	AH32AN02T-5C / AH32AN02P-5C / AH64AN02T-5C / AH64AN02P-5C	
		DVPACAB7C10	1.0m / DB37	AH32AM10N-5B / AH32AN02T-5B / AH32AN02P-5B	
		DVPACAB7D10	1.0m / HDC	AH04HC-5A / AH20MC-5A	
		DVPACAB7E10	1.0m / HDC	AH10PM-5A / AH15PM-5A	
	CANopen/DeviceNet cables	TAP-CB01	305.0m (Thick / Trunk Cable)	AH10COPM-5A / AH10DNET-5A / AHRTU-DNET-5A / TAP-CN01 / TAP-CN02 / TAP-CN03	
		TAP-CB02	305.0m (Thin / Drop Cable)		
CANopen/DeviceNet/DMCNET cables	TAP-CB03	0.3m / RJ45	AH20MC-5A / TAP-CN03		
	TAP-CB05	0.5m / RJ45			
	TAP-CB10	1.0m / RJ45			
	TAP-CB20	2.0m / RJ45			
	TAP-CB30	3.0m / RJ45			
PROFIBUS cables	TAP-CBDP	100.0m	AH10PFBM-5A / AH10PFBS-5A / AHRTU-PFBS-5A		
External terminal modules	For digital input modules	DVPAETB-ID32A	Latched connector	AH32AM10N-5C / AH64AM10N-5C	
		DVPAETB-ID32B	DB37	AH32AM10N-5B	
	For digital output modules	DVPAETB-OR16A	16 points relay output (240VAC/24VDC, 2A) Latched connector	AH32AN02T-5C / AH64AN02T-5C	
		DVPAETB-OR16B	16 points relay output (240VAC/24VDC, 2A) Latched connector	AH32AN02P-5C / AH64AN02P-5C	
		DVPAETB-OR32A	32 points relay output (240VAC/24VDC, 2A) DB37	AH32AN02T-5B	
		DVPAETB-OR32B	32 points relay output (240VAC/24VDC, 2A) DB37	AH32AN02P-5B	
		DVPAETB-OT32A	Transistor output latched connector	AH32AN02T-5C / AH32AN02P-5C / AH64AN02T-5C / AH64AN02P-5C	
	DVPAETB-OT32B	Transistor output DB37	AH32AN02T-5B / AH32AN02P-5B		
	For motion control modules	DVPAETB-IO16C	HDC	AH04HC-5A / AH20MC-5A	
		DVPAETB-IO24C	HDC	AH10PM-5A	
		DVPAETB-IO34C	HDC	AH15PM-5A	
	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		
		TAP-CN01	1 for 2		
		TAP-CN02	1 for 4		
		TAP-CN03	1 for 4 (RJ45)		
Space modules	To protect empty slots	AHASP01-5A			
DIN Rail	Used on DIN rail for rack installation	AHADINADP1-5A			
New Fiber optics modules for backplanes	Used for backplane extension via fiber optics (installs by the backplane's lower extension port)	AHAADP01EF-5A	<ul style="list-style-type: none"> Optical fiber connector: SC Supported optical fiber types: multi-modes, 62.5/125µm or 50/125µm Optical fiber max. length: 2km 	AHBP04M1-5A / AHBP06M1-5A / AHBP08M1-5A / AHBP12M1-5A/AHBP06E1-5A / AHBP08E1-5A	 
	Used for backplane extension via fiber optics (installs by the backplane's upper extension port)	AHAADP02EF-5A		AHBP06E1-5A / AHBP08E1-5A	
Memory card	SD card: 1 GB	FMC-SD001G	<ul style="list-style-type: none"> Capacity: 1GB Speed(R/W): Max. 18/15 MB/s 	<ul style="list-style-type: none"> Overwrite: 10,000 times Operation temperature: -40~85°C 	

Global Operations

ASIA (Taiwan)



Taoyuan Technology Center (Green Building)



Taoyuan Plant 1



Taoyuan Plant (Diamond-rated Green Building)

ASIA (China)

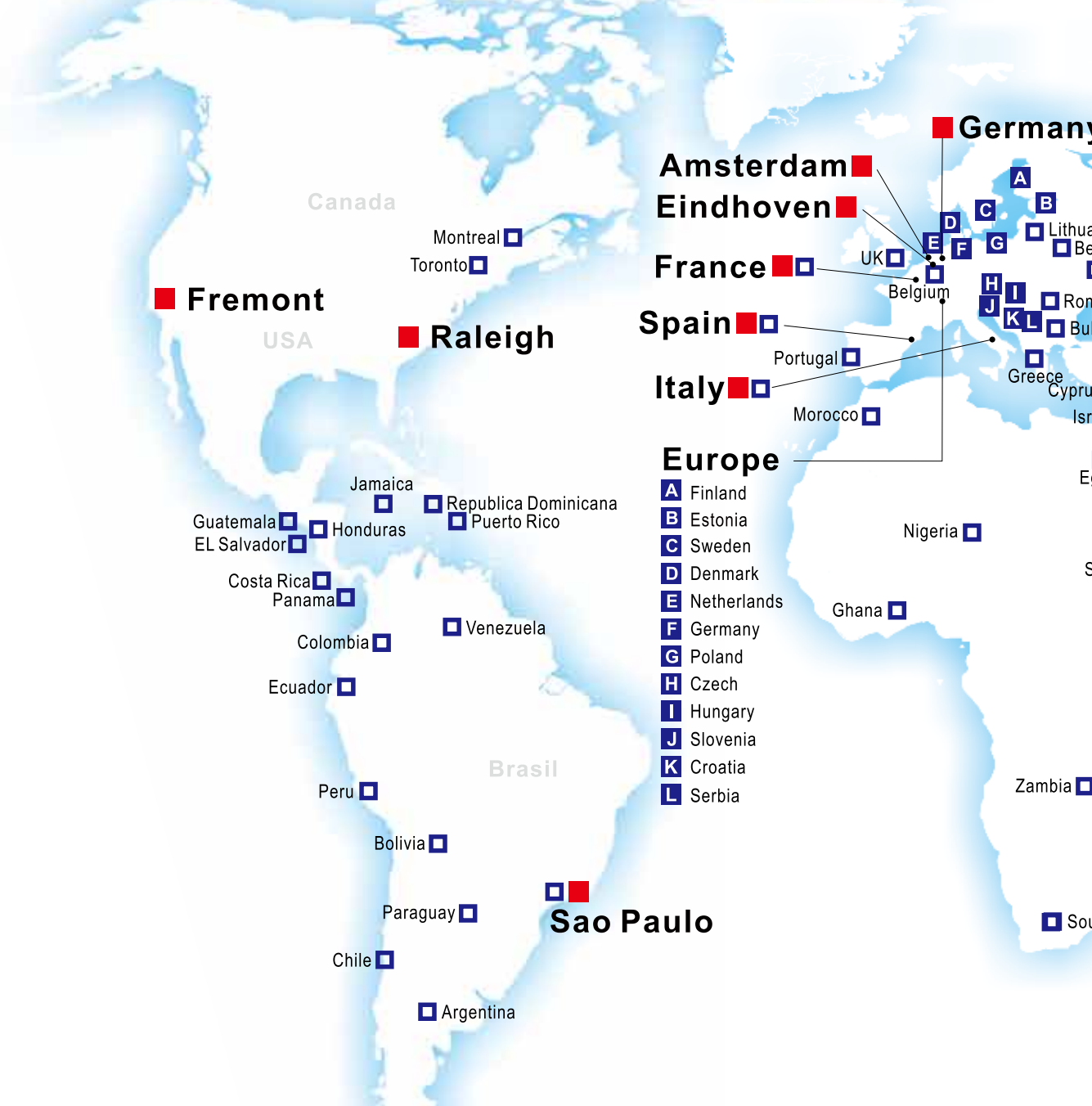


Wujiang Plant 3



Delta Electronics

Sales Channels of Delta Industrial Automation are Located Worldwide in 74 Countries



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Industrial Automation Headquarters

Delta Electronics, Inc.

Taoyuan Technology Center
No.18, Xinglong Rd., Taoyuan City,
Taoyuan County 33068, Taiwan
TEL: 886-3-362-6301 / FAX: 886-3-371-6301

Asia

Delta Electronics (Jiangsu) Ltd.

Wujiang Plant 3
1688 Jiangxing East Road,
Wujiang Economic Development Zone
Wujiang City, Jiang Su Province, P.R.C. 215200
TEL: 86-512-6340-3008 / FAX: 86-769-6340-7290

Delta Greentech (China) Co., Ltd.

238 Min-Xia Road, Pudong District,
ShangHai, P.R.C. 201209
TEL: 86-21-58635678 / FAX: 86-21-58630003

Delta Electronics (Japan), Inc.

Tokyo Office
2-1-14 Minato-ku Shibadaimon,
Tokyo 105-0012, Japan
TEL: 81-3-5733-1111 / FAX: 81-3-5733-1211

Delta Electronics (Korea), Inc.

1511, Byucksan Digital Valley 6-cha, Gasan-dong,
Geumcheon-gu, Seoul, Korea, 153-704
TEL: 82-2-515-5303 / FAX: 82-2-515-5302

Delta Electronics Int'l (S) Pte Ltd.

4 Kaki Bukit Ave 1, #05-05, Singapore 417939
TEL: 65-6747-5155 / FAX: 65-6744-9228

Delta Electronics (India) Pvt. Ltd.

Plot No 43 Sector 35, HSIIIDC
Gurgaon, PIN 122001, Haryana, India
TEL : 91-124-4874900 / FAX : 91-124-4874945

Americas

Delta Products Corporation (USA)

Raleigh Office
P.O. Box 12173, 5101 Davis Drive,
Research Triangle Park, NC 27709, U.S.A.
TEL: 1-919-767-3800 / FAX: 1-919-767-8080

Delta Greentech (Brasil) S.A.

Sao Paulo Office
Rua Itapeva, 26 - 3° andar Edificio Itapeva One-Bela Vista
01332-000-São Paulo-SP-Brazil
TEL: 55 11 3568-3855 / FAX: 55 11 3568-3865

Europe

Deltronics (The Netherlands) B.V.

Eindhoven Office
De Witbogt 15, 5652 AG Eindhoven, The Netherlands
TEL: 31-40-2592850 / FAX: 31-40-2592851

*We reserve the right to change the information in this catalogue without prior notice.