Automation for a Changing World

Delta Compact Modular Mid-range PLC AS Series

Smarter. Greener. Together.

Flexible, Smart, Friendly - The Best Choice for a Controller of Automated Equipment

AS Series

The AS Series Compact Modular Mid-range PLC is a high performance multi-purpose controller designed for all kinds of automated equipment. It features Delta's self-developed 32-bit SoC CPUs for enhanced execution speed (40k steps / ms) and supports up to 32 extension modules or up to 1,024 inputs / outputs. The AS series provides accurate positioning control for up to 8 axes via CANopen motion network and 6 axes via pulse control (200 kHz). It is widely used in diverse automated equipment such as electronics manufacturing, labeling, food packaging, and textile machines.

The AS Series Controller is equipped with CANopen and EtherNet/IP network communication for high-speed data transmission. The professional yet simple editing software ISPSoft delivers quick hardware and network configuration with built-in function blocks for different industries. It also provides multi-layer password protection for enhanced system security.

The AS Series adopts a rackless design and patented DIN rail clips for fast vertical module installation. The simple shape and dark gray exterior of the AS series help resist stains and dirt in harsh industrial environments.

High Efficiency Computing

- Advanced CPU performance
- Optimized execution efficiency
- Optimized I/O update rate
- Permanent data backup, no battery required

03

Accurate Axis Control

- Delta CANopen positioning control
- Simple control instructions
- High-speed pulse positioning control
- High-speed counter

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Simple Installation

- Easy installation process
- Convenient grounding protection
- Screwless installation procedure
- Loose-proof clip-type terminal block

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Industrial Network Solution

- EtherNet/IP solution
- Remote I/O solution
- Serial communication solution

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Programming and Diagnosis Functions

- Modular programming structure
- Convenient editing environment
- Easy hardware configuration and parameter setting
- Complete setting tools
- Multiple password protection

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- Model name explanation
- CPU
- AS Series I/O modules
- High-density modules and accessories
- Dimensions
- Ordering information

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ΔELTA

High Efficiency Computing

Delta's self-developed AS Series CPU provides 32-bit high-performance computing. As the core of a high-efficiency controller, it helps increase productivity and adaptability to demanding equipment.

Advanced CPU Performance

- **High speed execution up to 40k steps / ms**

  (Condition: 40 % LD instruction / 60% MOV instruction)

  - Max. number of inputs / outputs: 1,024
  - Program capacity: 128k steps
  - Data registers: 60k words
  - Max. extension ability: 32 modules

| Instruction	Time
LD instruction	25 ns
MOV instruction	0.15 µs
Floating point operation instruction	1.6 µs
Trigonometric function instruction	3.5 µs

# Optimized Execution Efficiency

■ **General Scanning Method**

Standard simplex scanning which sequentially goes through instructions by fixed schedule operation (e.g. I/O update).

It significantly affects overall execution speed.
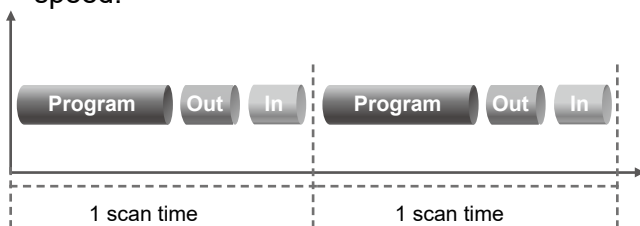

■ **AS Series Scanning Method**

Fixed schedule operations will be automatically processed by CPU background program when scanning starts. It significantly enhances execution speed.
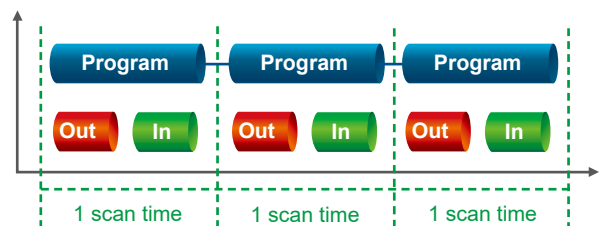
Optimized I/O updates

■ **Common in the industry: PLC module bus update via serial communication**

▪ General serial communication: the signal is sequentially sent from the 1st module to the last module. The more modules the longer I/O update time it takes.

The more modules, the slower update speed
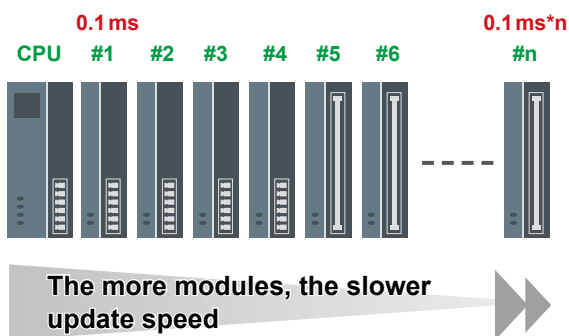
■ **AS Series: PLC module bus update via parallel communication**

▪ Industrial communication: the signal is sent via parallel communication. The I/O update time is not significantly prolonged even with more modules.
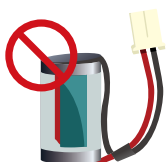
Industrial communication bus greatly enhances stability and speed.

Industrial communication bus greatly enhances stability and speed
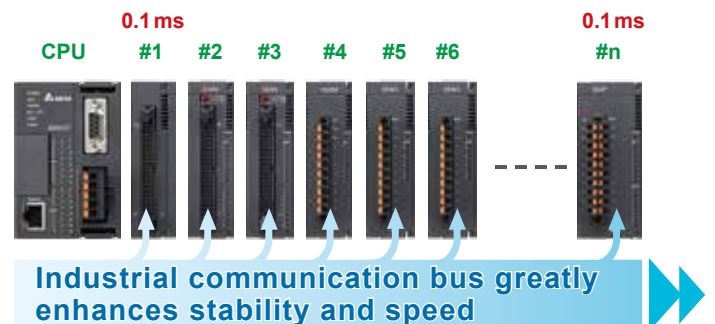
Note: The real updating performance will be different by different extension modules.

Permanent data backup, no battery required
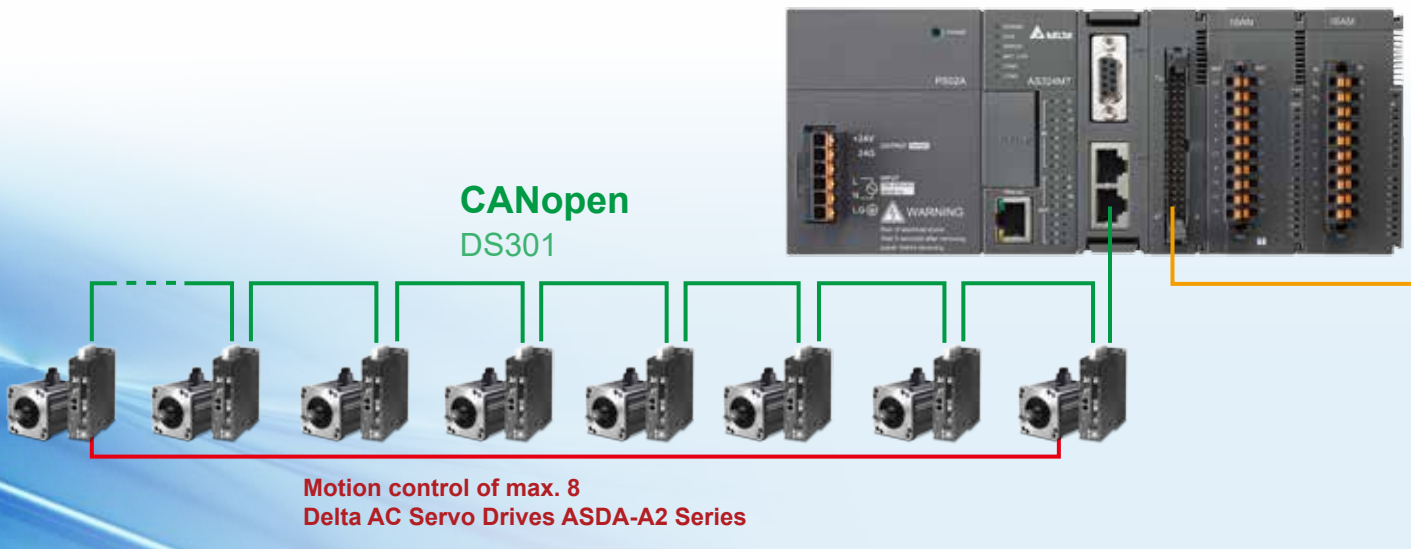
■ **Non-volatile memory material for data backup**

	PLC power off
PLC programs	permanent backup
Latched area	permanent backup

■ **Lithium button battery for Real Time Clock (RTC) function**

Install general CR 1620 battery

	PLC power off
RTC	keeps accurate time

Accurate Axis Control - Positioning Control Solution

CANopen
DS301

Motion control of max. 8
Delta AC Servo Drives ASDA-A2 Series

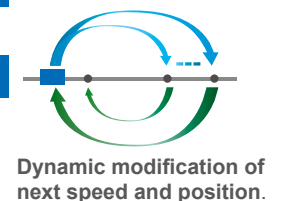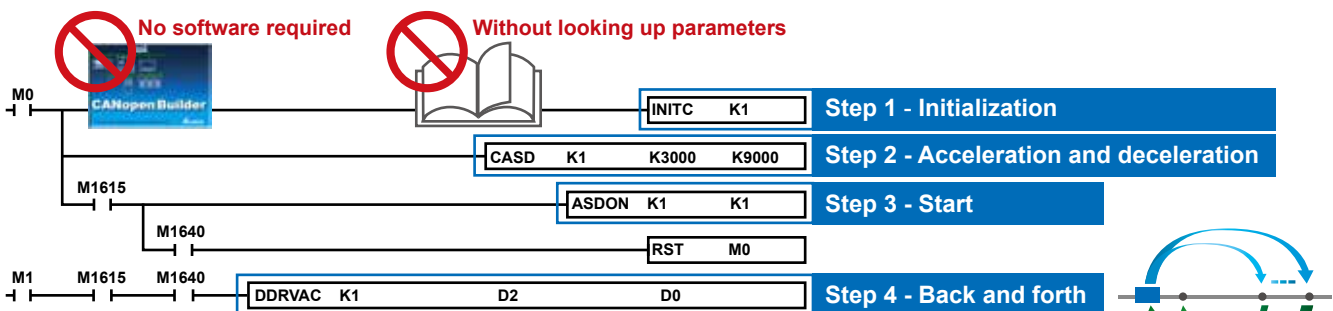## ■ Positioning control - Delta's CANopen Control

- Delivers up to 8-axis CANopen positioning control with AS-FCOPM communication card
- Fast positioning configuration in one initialization instruction without building CANopen data exchange table
- Batch download programmable servo drive parameters avoids risk of loss
- Axis control by instructions provides easy maintenance and high PLC program readability

CANopen
DS301

Controls up to 8   AC Servo Drive ASDA-A2 Series
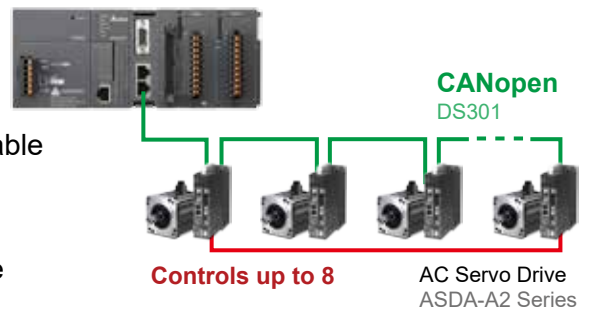
■ Simple control instructions for AC Servo Drive ASDA-A2 Series

- Initialization: INITC
- Relative positioning: DRVIC
- Read and write parameter: COPRW
- Acceleration and deceleration: CASD

- Constant speed control: PLSVC
- Absolute positioning: DRVAC
- Start / Stop: ASDON
- Homing: ZRNC

ASDA-A2 back and forth motion control in 4 steps

No software required   Without looking up parameters

| M0 | INITC | K1 | | Step 1 - Initialization |

| CASD | K1 | K3000 | K9000 | Step 2 - Acceleration and deceleration |

| M1615 | ASDON | K1 | K1 | Step 3 - Start |

| M1640 | RST | M0 | |

| M1 | M1615 | M1640 | DDRVAC | K1 | D2 | D0 | Step 4 - Back and forth |

Dynamic modification of next speed and position.

5

Pulse ⊓⊔⊓⊔

**Motion control of max. 6
Delta AC Servo Drives ASDA-B2 Series**

■ **Positioning control - high-speed pulse**

- AS332T-A/AS332P-A transistor CPU: 6 axes (or 12 channels) 200 kHz
- AS324MT-A differential CPU: 2 axes 4 MHz + 4 axes 200 kHz
- Supports positioning planning table for fast positioning planning and path simulation
- Choose any given 2 axes for linear and arc interpolation

* Note: Please refer to the product specification section (P.23)
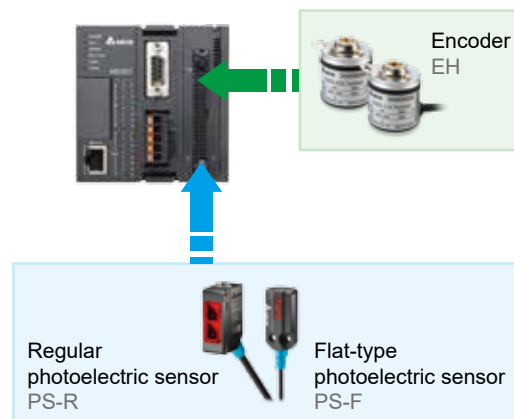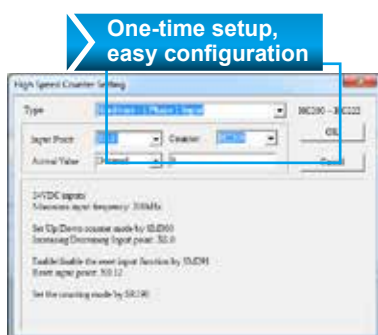for more information on CPU models
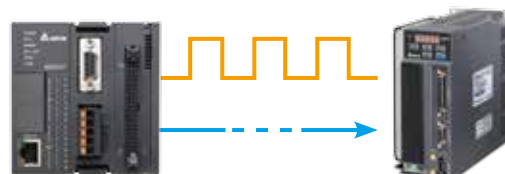
AC Servo Drive
ASDA-B2 Series

■ **High-speed counter**

- Real-time high precision monitoring:
  AS332T-A/AS332P-A transistor CPU: 6 channels 200 kHz
  AS324MT-A differential CPU: 2 channels 4 MHz / 4 channels 200 kHz
- Up to 16 external input interrupts
- High-speed counter setting tools

* Note: Please refer to the product specification section (P.23)
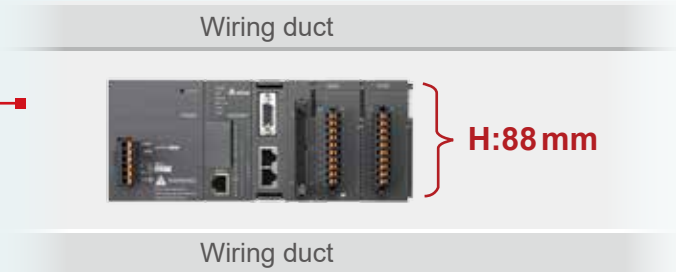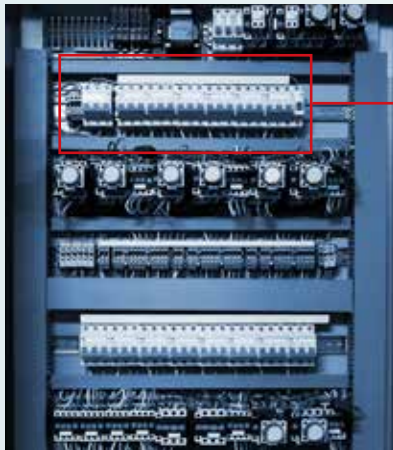for more information on CPU models

**One-time setup,
easy configuration**

Encoder
EH

Regular
photoelectric sensor
PS-R

Flat-type
photoelectric sensor
PS-F

Δ NELTA

Simple Installation

Easy installation design

- Space-saving design suitable for installation in control panels

Wiring duct

H:88 mm

Wiring duct

Rackless Din-rail installation

- Delta patented design

Robust slot and clip interlocking design

Delta's patent

Fast disassembly

- Release the clip ring to easily take out the module from the front without moving adjacent modules

## Simple installation process

- Press the clip rings and push the module to the desired position until hearing a "click" to finish installation

Push

Convenient grounding protection

- Install on Din-rail: CPU module and expansion modules can be installed directly on Din-rail without backplane
- Install with screw: pull out the installation clip ring and directly install it on the panel
- Both methods are equipped with ground protection

Ground protection

Top clip ring   Back clip ring
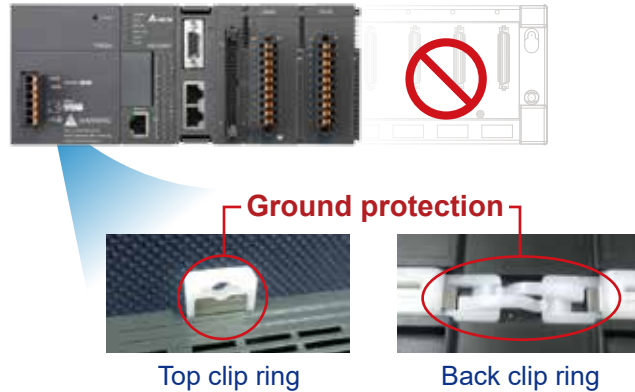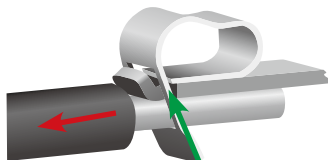
Screwless and time-saving installation

Time-saving installation
Complete I/O wiring in 1 second

Robust Loose-proof spring clamp terminal block

- In commonly used spring clamp terminal blocks, the clamping force is determined by the spring material, which decreases with the aging of the spring.

The green arrow is the clamping force, and the red arrow is the pull-out force.

- The AS Series adopts the full-covered spring clamp design that enhances the clamping force. When the wire is pulled-out (red arrow) and the spring moves up (green arrow), a downward force is generated (blue arrow) to clamp the wire.
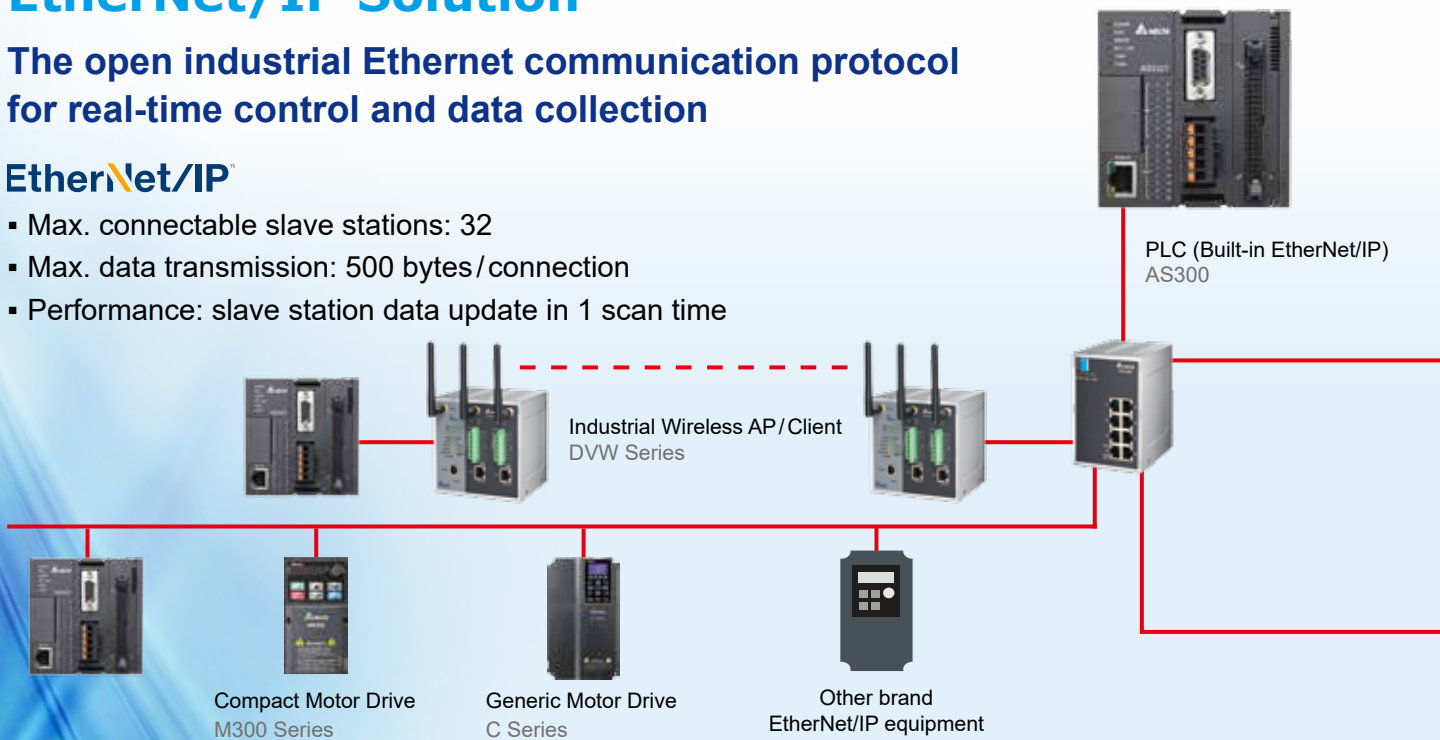
ΛELTA
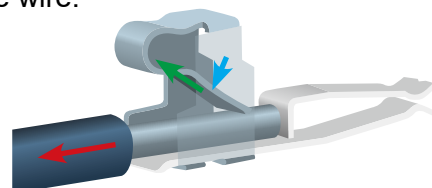
Industrial Network Solution

EtherNet/IP Solution

The open industrial Ethernet communication protocol for real-time control and data collection
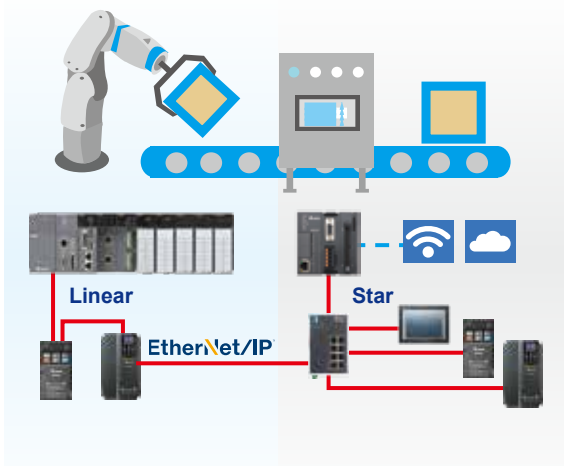
EtherNet/IP

- Max. connectable slave stations: 32
- Max. data transmission: 500 bytes / connection
- Performance: slave station data update in 1 scan time

PLC (Built-in EtherNet/IP)
AS300

Industrial Wireless AP / Client
DVW Series

Compact Motor Drive
M300 Series

Generic Motor Drive
C Series

Other brand
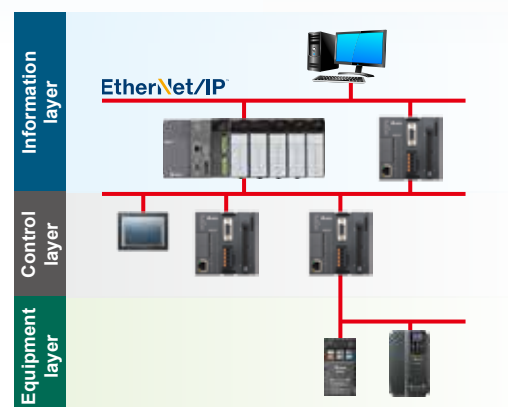EtherNet/IP equipment

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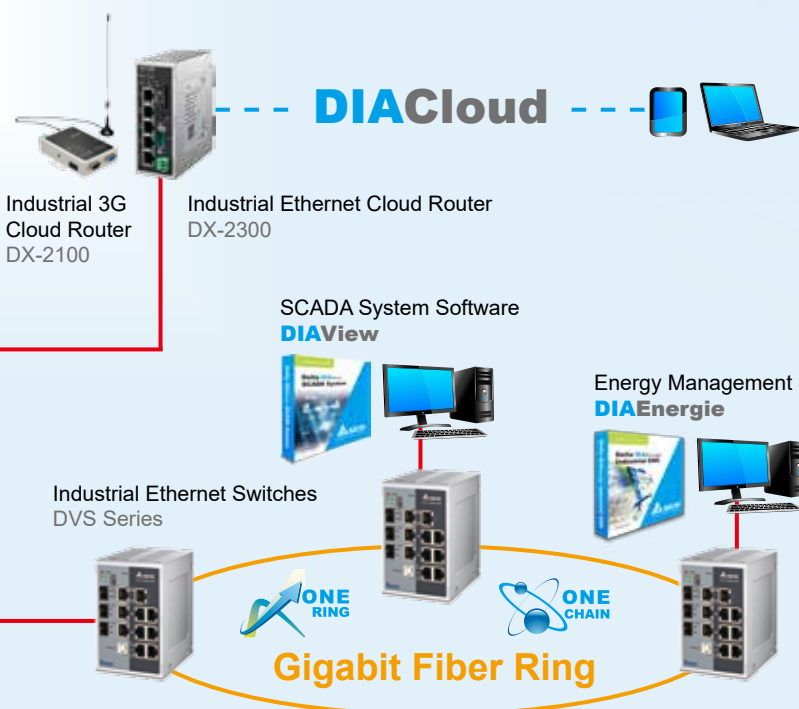### ■ Flexible network system configuration

- Supports star, linear network topology for fast expansion and management on production lines
- Compatible with IT network. No independent network or IT technician required
- Combines with Delta IES solution to construct IoT for more automation applications and industrial 4.0 upgrades

Linear   Star

EtherNet/IP

■ One cable, one network

- Complete Delta EtherNet/IP solution connects different equipment via Ethernet cable and simplify cable preparation
- Replaces traditional 3-layer industrial network structure with seamless connection via 100 MB high-speed network
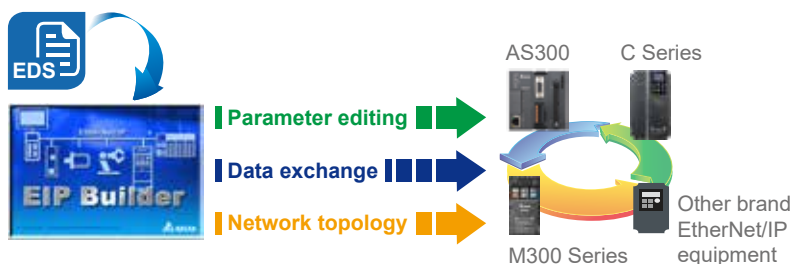- Complete industrial network diagnosis for shortened debug time

Information layer

Control layer

Equipment layer

EtherNet/IP

DIACloud

Industrial 3G
Cloud Router
DX-2100

Industrial Ethernet Cloud Router
DX-2300

SCADA System Software
DIAView

Energy Management System Software
DIAEnergie

Industrial Ethernet Switches
DVS Series

ONE RING

ONE CHAIN

Gigabit Fiber Ring

IoT & Industrial Ethernet

- DIACloud platform connection
- Redundancy ring recovery time < 20 ms
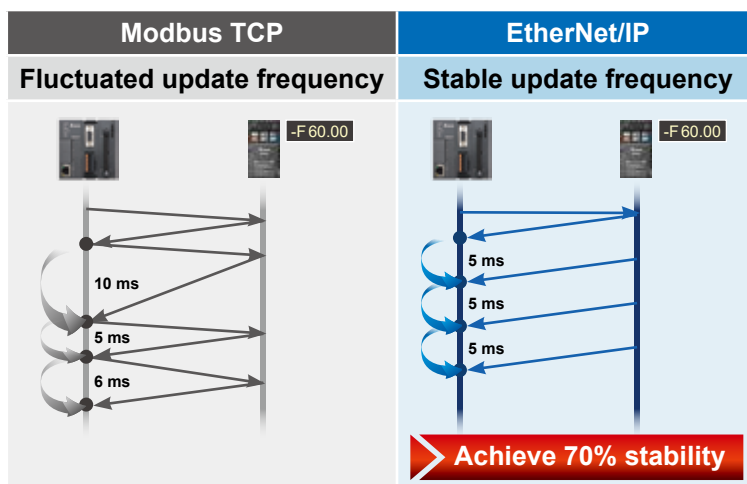- Industrial class EMC testing

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■ Software integration

- Consistent data exchange interfaceshortens learning time with fast system configuration
- Provides Delta equipment parameterlist for quick parameter matching without looking into detailed manual
- EDS File provides quick connection with EtherNet/IP products of other brands

EDS

EIP Builder

| Parameter editing |
| Data exchange |
| Network topology |

AS300   C Series
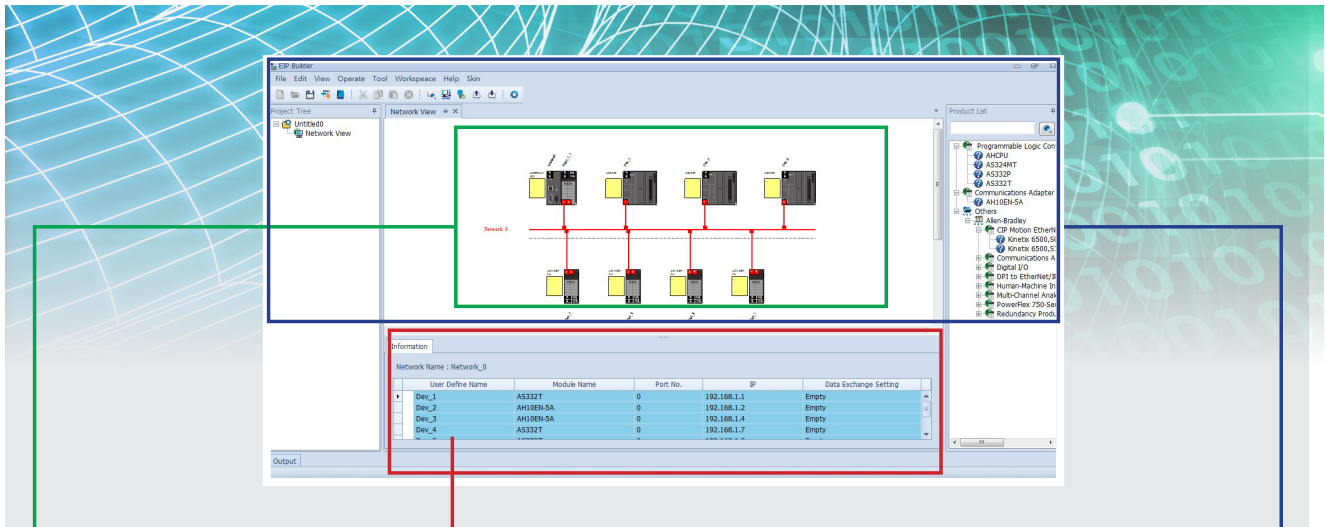
M300 Series

Other brand
EtherNet/IP
equipment

■ Accurate data update

- Provides real-time cyclic and acyclic data transmission and define data priority between equipment
- Establishes multiple CIP links and define different register priority with one piece of equipment
- Executes data update based on user RPI. Updates all slave station data in one scan time
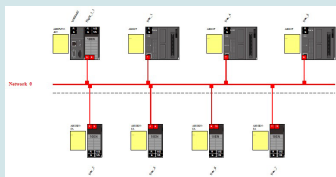- 70% better stability compared with traditional Modbus TCP

Modbus TCP	EtherNet/IP
Fluctuated update frequency	**Stable update frequency**

-F 60.00   -F 60.00

10 ms   5 ms
5 ms   5 ms
6 ms   5 ms

Achieve 70% stability

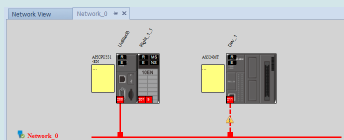**NELTA**

EtherNet/IP Software EIP Builder

Visualized Network Mapping

- Direct network planning

Network Mapping Diagnosis

- Real-time network status and device indicators display

Parameter List

- Built-in parameter list of Delta's products

Data Exchange Table

- Data exchange via table blanks filling. PLC programing is not required

Data Input/Output Corresponding Table

- Preset data exchange on corresponding parameters
- Connecting equipment editing on corresponding parameters

Data Exchange Diagnosis

- Data exchange status and error codes

Visualized Product List

- Visualized equipment selection
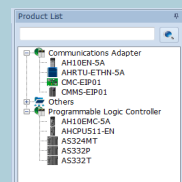
IP Management Function

- Configure all IP address of all EtherNet/IP products

Equipment Description Management Function
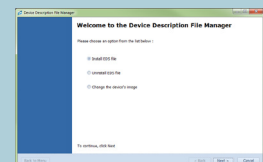
Remote I/O Solution

CANopen Remote I/O

- Max quantity of RIO stations: 15 stations
- Max quantity of IO modules (CPU right side + RIO (SCM) right side): 32 modules
  - Max DIO points: 1,024 points
  - Max quantity of AIO modules: 16 modules
  - Max quantity of communication modules: 4 modules (Only installed on CPU right side)
  - Max quantity of IO modules installed on RIO (SCM) right side: 8 modules
- AS-FCOPM can only be installed in slot 2 of the CPU and SCM
  - When a CPU is installed as AS-FCOPM in slot 2, then slot 1 can be used to install another function card except AS-FCOPM
  - When SCM is working in RIO (RTU) mode, then slot 1 is disabled
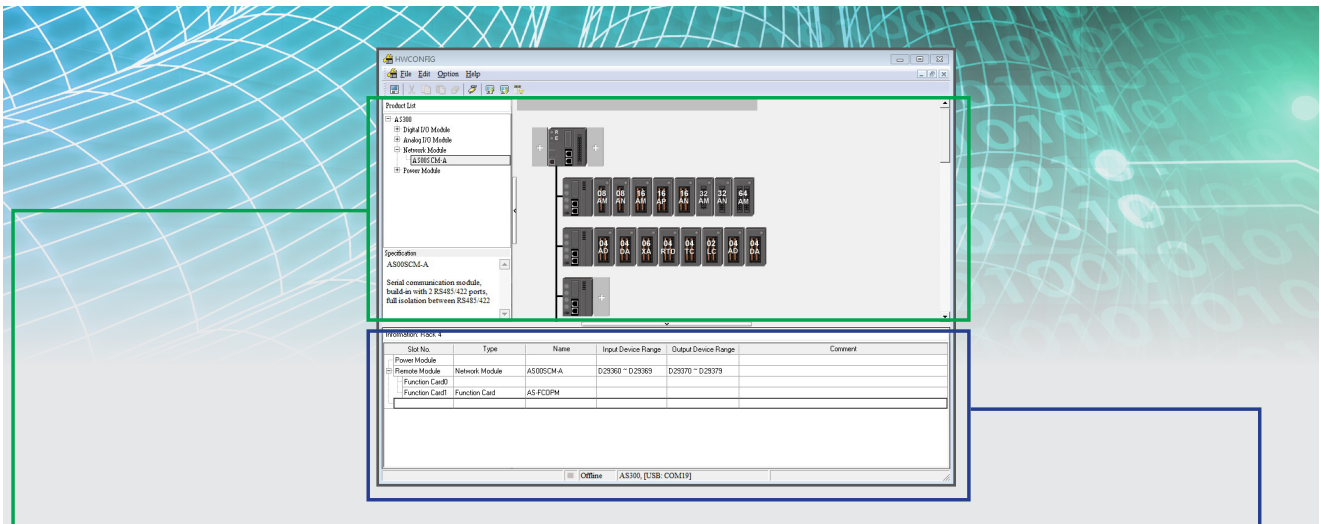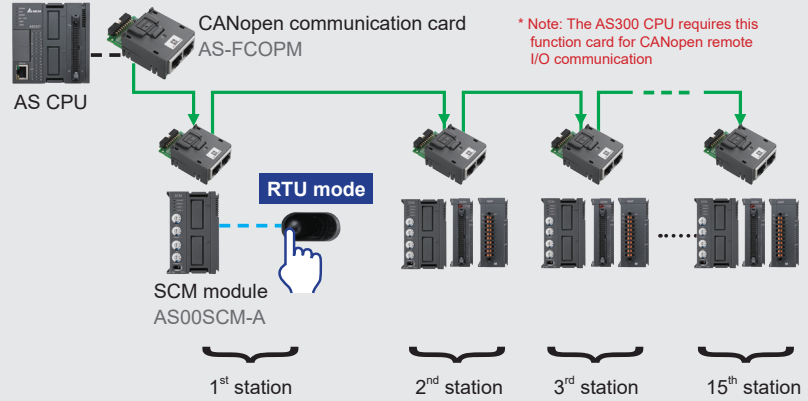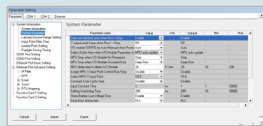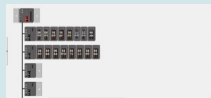
CANopen communication card
AS-FCOPM

AS CPU

* Note: The AS300 CPU requires this function card for CANopen remote I/O communication

RTU mode

SCM module
AS00SCM-A

1st station   2nd station   3rd station   15th station

Hardware Configuration

- Hardware parameter complete planning

Visualized I/O Structure

- Direct I/O planning

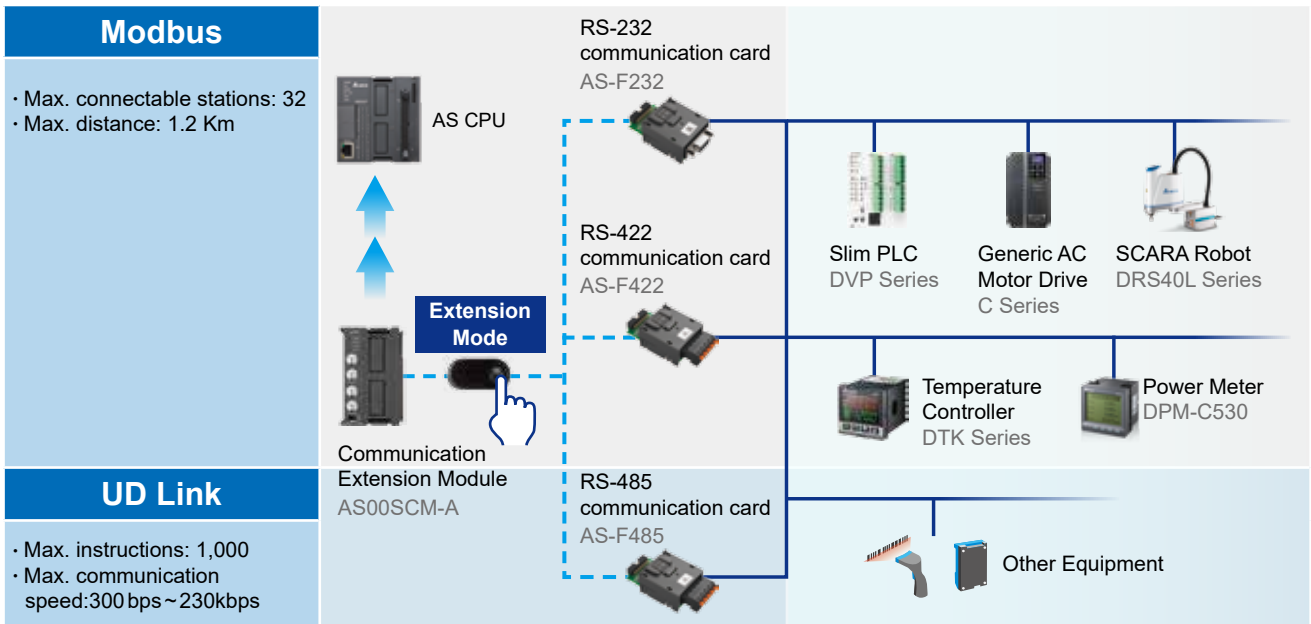## I/O Product List

- Product description and specification

I/O Without Planning

- Auto-mapping with I/O addresses in CPU (X,Y, and D)

DIO

	Type	Name	Input Device Range	Output Device Range	Comment
Power Module					
Remote Module	Network Module	AS00SCM-A	D29000 ~ D29009	D29010 ~ D29019	
Function Card0					
Function Card1	Function Card	AS-FCOPM			
Module Information	Digital I/O Module	AS08AM10N	X1.0 ~ X1.15		
Module Information	Digital I/O Module	AS08AN01T		Y1.0 ~ Y1.15	
Module Information	Digital I/O Module	AS16AM10N	X2.0 ~ X2.15		
Module Information	Digital I/O Module	AS16AP11T	X3.0 ~ X3.15	Y2.0 ~ Y2.15	
Module Information	Digital I/O Module	AS16AN01T		Y3.0 ~ Y3.15	
Module Information	Digital I/O Module	AS32AM10N	X4.0 ~ X5.15		

AIO

	Type	Name	Input Device Range	Output Device Range	Comment
Power Module					
Remote Module	Network Module	AS00SCM-A	D29180 ~ D29189	D29190 ~ D29199	
Function Card0					
Function Card1	Function Card	AS-FCOPM			
Module Information	Analog I/O Module	AS04AD-A	D29200 ~ D29219		
Module Information	Analog I/O Module	AS04DA-A		D29220 ~ D29239	D No.+00=Status,+02=Ch1,+04=Ch2,+06=Ch3,+08=Ch4
Module Information	Analog I/O Module	AS06XA-A	D29240 ~ D29249	D29250 ~ D29259	D No.+00=Status,+02=Ch1 AD,+04=Ch2 AD,+06=Ch2 AD,+08=Ch4 A
Module Information	Analog I/O Module	AS04RTD-A	D29260 ~ D29279		D No.+00=Status,+02=Ch1,+04=Ch2,+06=Ch3,+08=Ch4
Module Information	Analog I/O Module	AS04TC-A	D29280 ~ D29299		D No.+00=Status,+02=Ch1,+04=Ch2,+06=Ch3,+08=Ch4
Module Information	Analog I/O Module	AS02LC-A	D29300 ~ D29303	D29304 ~ D29319	D No.+00=Status,+02=Ch1,+04=Ch2,+06=calibration Command

ΔNELTA

Serial Communication Solution

Modbus

· Max. connectable stations: 32
· Max. distance: 1.2 Km

AS CPU

Extension Mode

Communication Extension Module
AS00SCM-A

UD Link

· Max. instructions: 1,000
· Max. communication speed: 300 bps～230kbps

RS-232 communication card
AS-F232

RS-422 communication card
AS-F422

RS-485 communication card
AS-F485

Slim PLC
DVP Series

Generic AC Motor Drive
C Series

SCARA Robot
DRS40L Series

Temperature Controller
DTK Series

Power Meter
DPM-C530

Other Equipment

■ Modbus Mode

▪ Easy data exchange configuration

Compact Modular Mid-range PLC
AS PLC

Standard Type PLC
DVP-ES2 Series

On-site deployment

Creating Table

ISPSoft Data Exchange Table

Generic AC Motor Drive
C Series

Temperature Controller
DTK Series

Power Meter
DPM-C530

13

■ Real-time history log diagnosis

- AS00SCM stores 2k bytes history log. SCMSoft directly displays the log for real-time communication status monitoring with no additional monitoring software required
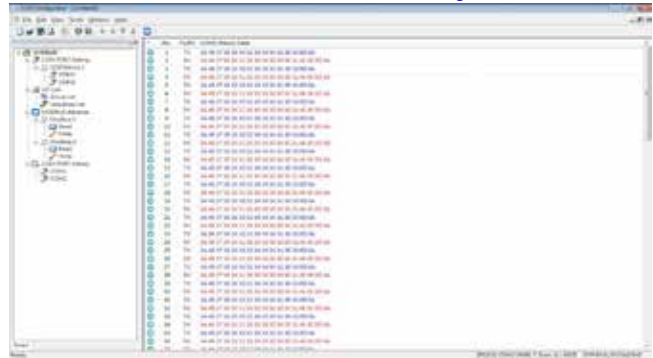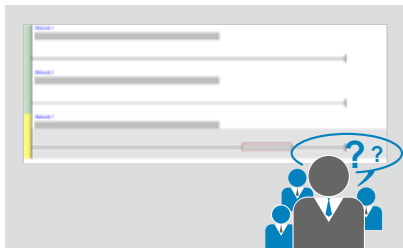

■ UD Link Mode (User-defined)

- Easy connection to end equipment of special communication protocols

Traditional programming structure

Instruction receiving, accessing, editing, transmitting, sequence control

Connection to end equipment of special communication protocols

- Editing the transmitting / receiving packets via SCMSoft. Format exchange and checksum calculation via AS00SCM
- Packet content auto-combination for logic control in PLC, reducing PLC program complexity
- Max. 1,000 transmitting / receiving packets

*	Packet No.	RX Packet Name
	1	RX Packet1
	2	RX Packet2
	3	RX Packet3

*	Packet No.	TX Packet Name
	1	TX Packet1
	2	TX Packet2
	3	TX Packet3

Packet Segment Edit

No.	Class	Format	Segment View	
1	Message Constant	ASCII	"abcd"	Up
2	Address Variable	Null	(R(D Register [4]), 4)	Down
3	Message Constant	ASCII	"efgh"	
				Delete

Instruction execution sequence planning   **User-defined communication format editing**

| *	Command No.	Command Type	Send Packet	Recv Packet	Success	Fail	Retry	Repeat	Send Wait
	1	Send & Receive	TX Packet1	RX Packet1	Goto : 1	Goto : 1	0	2	0
	2	Send & Receive	TX Packet2	RX Packet2	Goto : 2	Goto : 1	0	3	0
	3	Send & Receive	TX Packet21	RX Packet3	Goto : 3	Goto : 1	0	4	0
	4	Send & Receive	TX Packet25	RX Packet4	Goto : 4	Goto : 1	0	5	0
	5	Send & Receive	TX Packet28	RX Packet5	Goto : 5	Goto : 1	0	6	0

ΔNELTA

ISPSoft IEC Programming Software

Easy operation greatly enhances efficiency
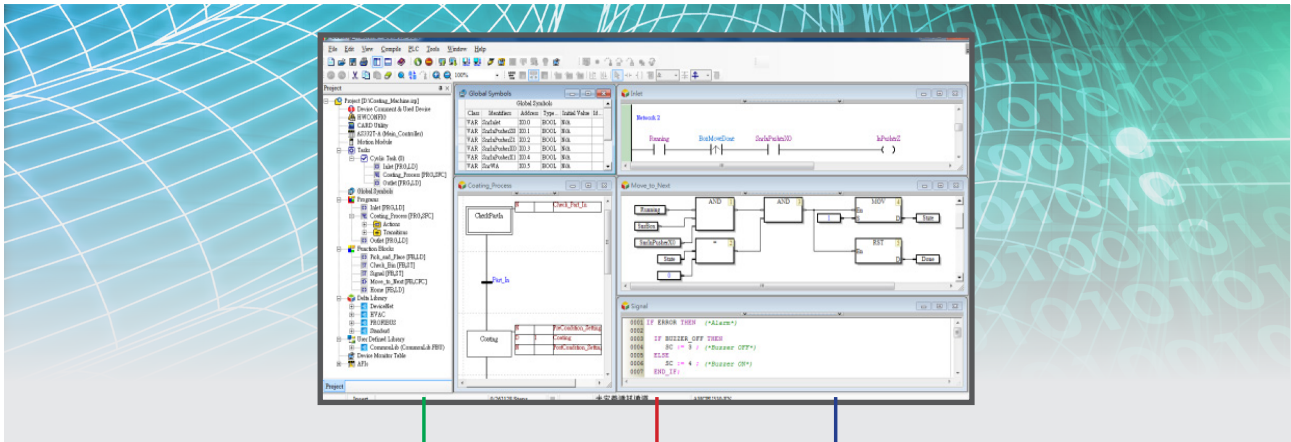
Data Tracer / Logger

- Data log and time-sequential analysis
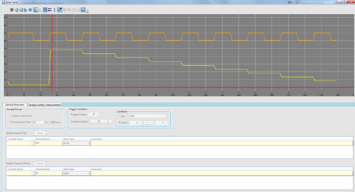
Positioning Planning Tool

- Table-structured position planning

CARD Utility

- Data backup tool
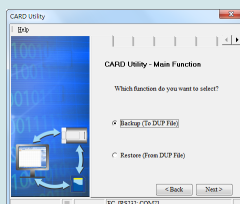
COMMGR

- Communication interface manager

HWCONFIG

- Hardware configuration and parameter setting
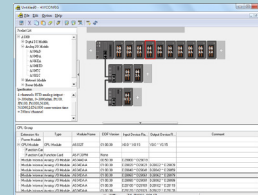
EIP Builder

- EtherNet/IP network configuration
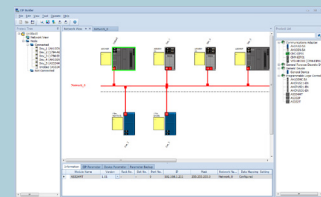
CANopen Builder

- CANopen network configuration
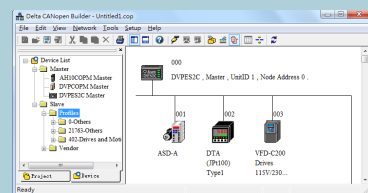
Modular Program Structure

■ Traditional program structure

Errors are often found in large-scale programs under a traditional structure. It's hard to debug with increased maintenance cost.

- Main program (Cyclic)
  - Step 1
    .
    .
  - Step 2
    .
    .
  - Step 3
    .
    .
- Interrupt subprogram
  - Step 4
    .
    .
- General subprogram
  - SubprogramA
    .
    .
  - Subprogram B
    .
    .

■ Modular program structure

Programming organization unit (POU) enables easy management in large-scale programs with high development efficiency.

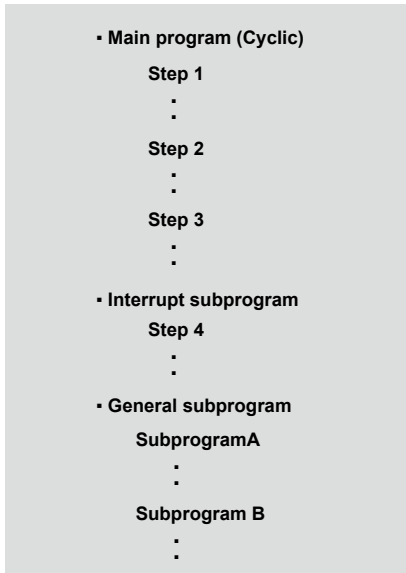| Step 1 | |
| Step 2 | • **Joint development** |
| | Different programming units are jointly developed by different engineers, enhancing development efficiency |

| Step 3 | • **Pause execution of POUs** |
| Step 4 | Temporarily stop the function of certain POU for debug and maintenance |

| FB A | • **Individual encryption** |
| FB B | POU can be encrypted individually to protect know-how and intellectual property |
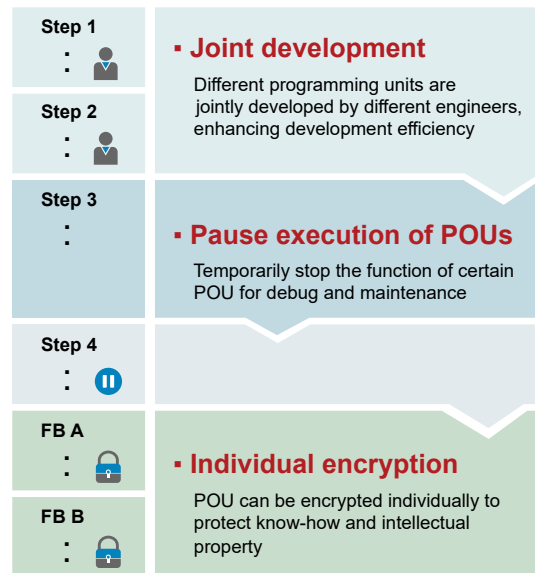
■ Modular Program Structure
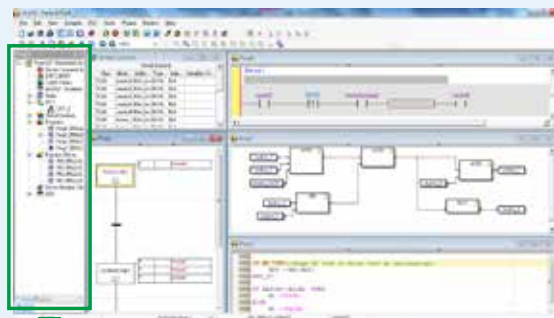
Display panel of task manager
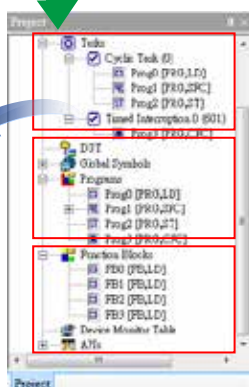
• **Task manager**

Plan the execution sequence of POUs and define the nature of the tasks (cyclical or interruptive)

• **POU management**

Manage all POUs via project tree and support POU import / export for joint development or other uses

• **User library**

Built-in variety of Delta developed FBs. Users can add frequently used FBs to the library for future use.

ΔNELTA

Convenient Programming

▪ User-defined data type

In addition to basic data types, users can define structures and enumerations for flexible programming

▪ On-line programming / update

Supports program editing in monitoring mode and program updates during equipment operation for convenient debugging and maintenance

▪ Debugging mode

Supports breakpoints, single step execution and other functions to enhance debugging efficiency
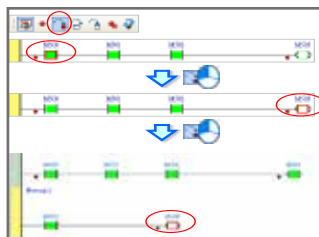
Various Programming Languages

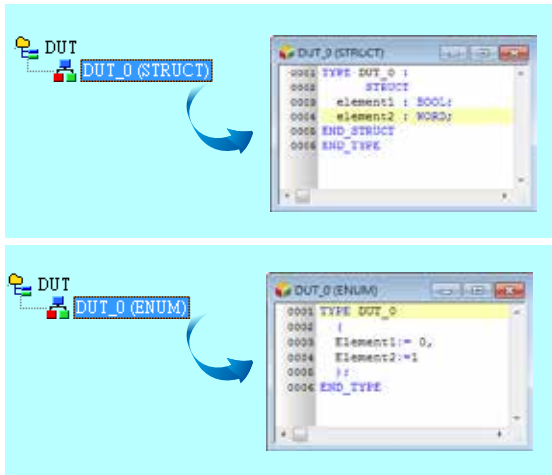### ▪ Support multiple programming languages in the same project

▪ Ladder Diagram (LD)

ISPSoft provides a programming interface with the widely used LD language for faster programming

▪ Structured Text (ST)

Similar programming method to advanced programming language C or PASCAL. ST provides more convenient editing for complicated expression

▪ Continuous Function Chart (CFC)

CFC provides more advanced applications than FBD. It supports data feedback, direct display of data stream and execution sequence for motion control and sequence-centered application

Note: ISPSoft V3.01 supports CFC language

▪ Sequential Function Chart (SFC)

Direct and easy expression for the steps in flow charts for applications that require process control
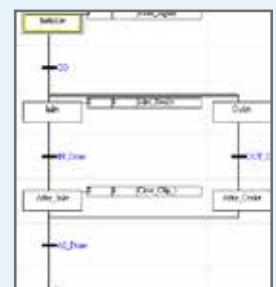
Easy Hardware Configuration and Parameter Setting

HWCONFIG
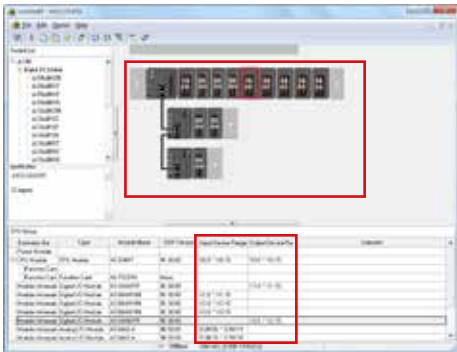
- **Graphic panel for module configuration**

  Easy configuration based on connecting equipment scanning for quick setup

- **I/O listing**

  Direct display for corresponding device addresses after configuration

- **Parameter setting**

  Fast parameter setting on controller and modules without manual reference or programming
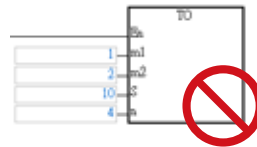
Note: Fill the table to configure module parameters quickly.
From / To instruction is not required for module initialization.

- **Module configuration method**

  Scan the actual equipment setup
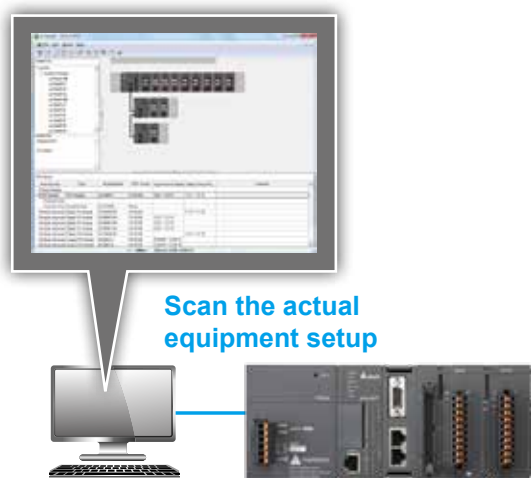
- **Smart module configuration**

  Supports an advanced planning tool for a variety of network modules

NELTA
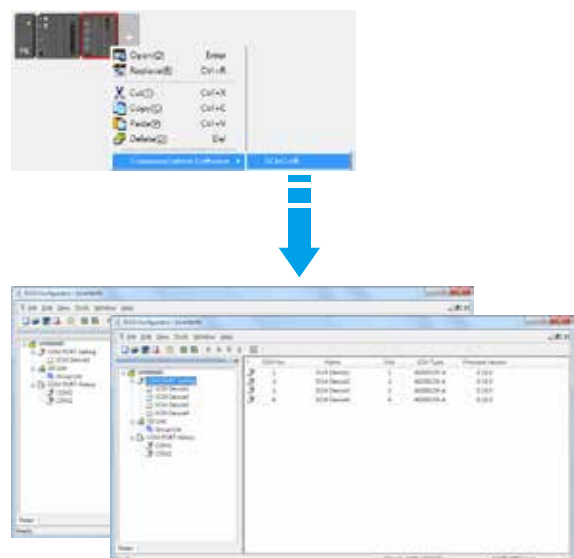
Complete Diagnosis Tools for Quick and Effective System Monitoring

Data Logger / Tracer

> **Real-time**
> **Stable**
> **Precise**
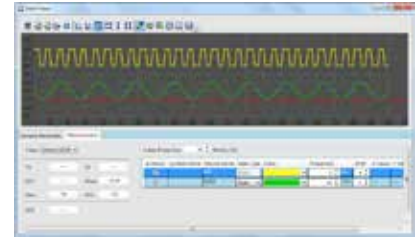
- **Real-time monitoring:**
  High-speed tracer for fast sampling within 1 scanning cycle

- **Stable logging:**
  Long-time data logger savings of up to 32,768 data records, which can be transferred to SD card

- **Precise data capture:**
  Supports a variety of sampling intervals and trigger modes

- **Convenient comparison:**
  Multiple data logs in various data formats can be recorded at the same time

- **Efficient data analysis:**
  Supports trend display, scaling, arrangement, merge and measurement

Real-time Module Monitoring
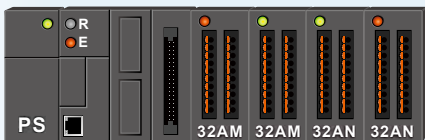
- **Visualized monitoring**
  Direct monitoring interface provides real-time status on modules via LED indicators

- **Module comparison**
  Real-time inspection of actual module settings to ensure consistency

- **Error logs**
  Immediate inquiry for error messages and logs of abnormal modules

- **Module information**
  Provides model name and version of current modules

Convenient Software Wizards for Effortless Planning

Position planning table
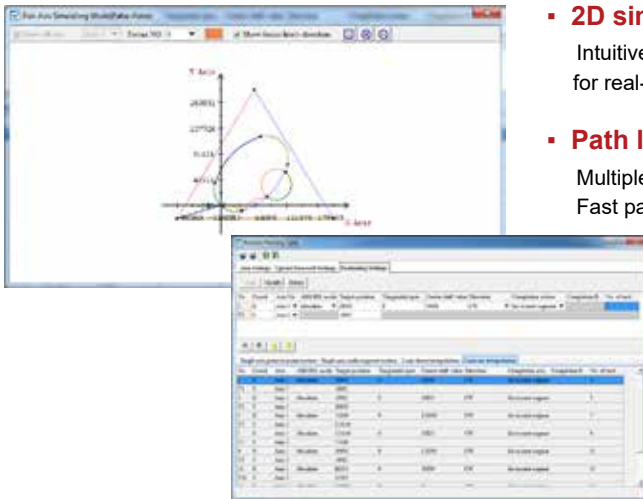
- **2D simulation**

  Intuitive 2D track simulation without complicated calculation for real-time path planning

- **Path list**

  Multiple combinations for positioning modes and tracks
  Fast path planning via table-structured planning

- **Axis parameter setting**

  Intuitive configuration interface for easy axis parameter setting without manual reference

■ High-speed counter setting tool

Counter index will display corresponding contact point, device and counter specification once the counting mode is chosen. Fast planning without manual reference for enhanced development efficiency.

One-time setting
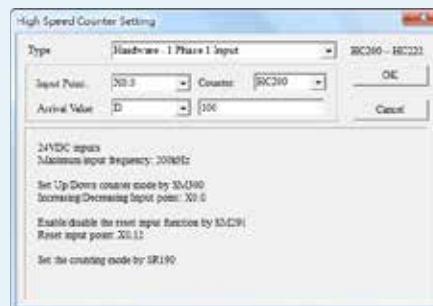
■ Data backup tool - CARD Utility

Friendly guidance interface for easy data backup and restore on programs, parameters and devices
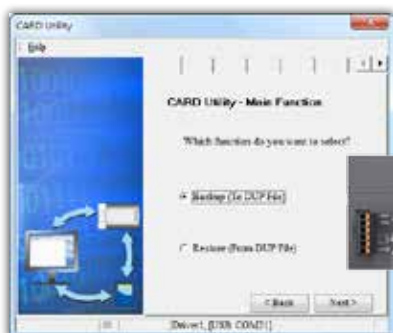
Various backup and restore methods for flexible management and operation

Data backup to PC

Data backup to SD card

Multiple Security Protection for Programs and Data

- **Security: provides 6 types of program protection for data safety**

  - 16-digit password protection on main program
  - 16-digit password protection on FBs
  - Access denial mechanism on error login
  - Data upload protection function
  - Verification between Project (Programmimg ID) and CPU (PLC ID)

Equipment Developer

Setting Programming ID in the project

Programming ID to protect the intellectual property of equipment developers

Customer A

Program Downloading

Customer B

Program Downloading

Buy AS PLC from equipment developer	Buy AS PLC from the market
With the same PLC ID specified by the equipment developer	With different PLC ID
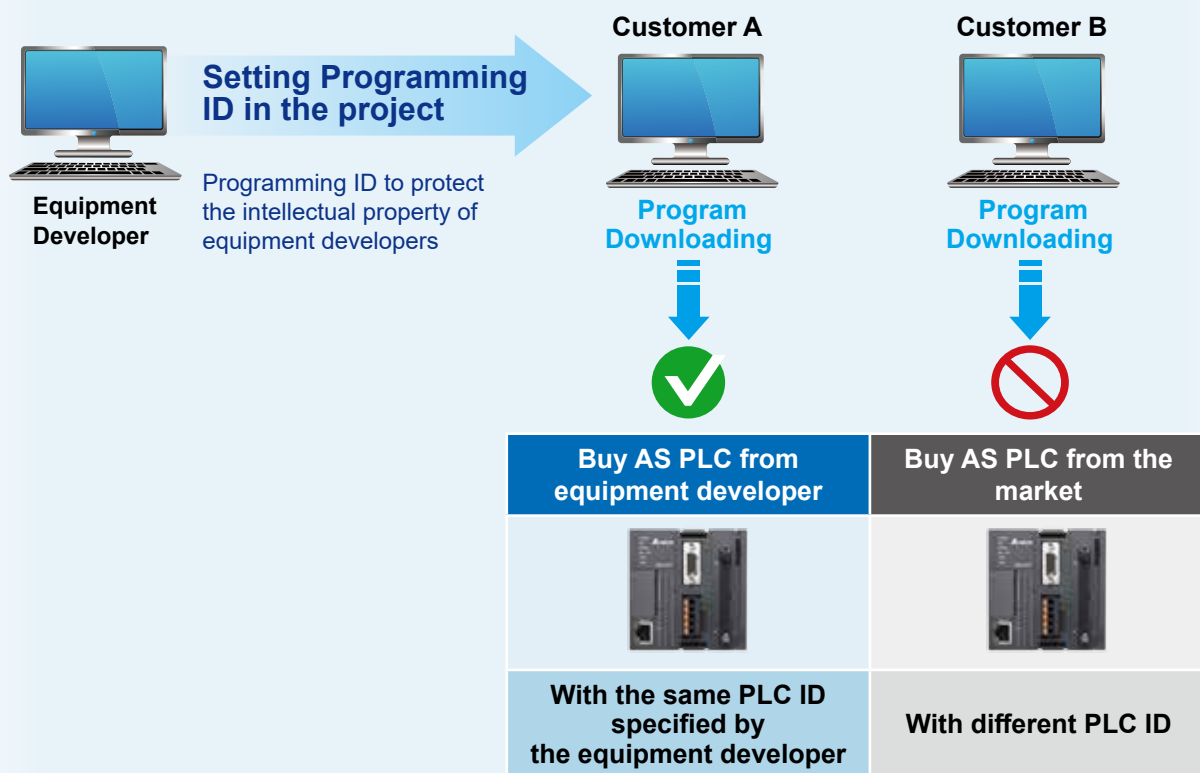
  - Prevention of direct copy from IC

Download

AS300

AS300

IC duplication prohibited

Model Name Explanation

CPU Module

AS332T-A

AS	3	32		T	-	A	
Series	Model	IO Pts.		Output type		Type	
	3: 300 2: 200	00: None 18: 18 Pts. 20: 20 Pts.	24: 24 Pts. 28: 28 Pts. 32: 32 Pts.	N: None T: NPN P: PNP	R: Relay MT: NPN+Diff.	【300 CPU】 A: HDC terminal B: EU terminal	【200 CPU】 A: Basic

Digital I/O Module

AS08AM10N-A

AS	08	AM	1	0	N	-	A
Series	IO Pts.	Classification		Function	Output type		Type
	08: 8 Pts. 16: 16 Pts. 32: 32 Pts. 64: 64 Pts.	AM: Digital input AN: Digital output AP: Digital input/output	0: No input 1: DC input (24 V)	0: No output 1: 0.5 A transistor/2 A relay output 2: 0.1 A transistor output	N: No output T: NPN P: PNP R: Relay		A: Basic

Analog I/O Module

AS04AD-A

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

Motion Module

AS02PU-A

AS	02	PU	-	A
Series	IO Channels	Classification		Type
	02: 2-channel 04: 4-channel	PU: Pulse-train output		A: Basic

Temperature & Load Cell Module

AS04RTD-A

AS	04	RTD	-	A
Series	IO Channels	Classification		Type
	02: 2-channel 04: 4-channel 06: 6-channe 08: 8-channel	RTD: Platinum resistance thermometer TC: Thermocouple LC: Load cell		A: Basic

Communication Module

AS00SCM-A

AS	00	SCM	-	A
Series	Function	Classification		Function
	00: Basement 01: Basic	SCM: Serial DENT: DeviceNet		A: Basic

Function Card

AS-F232

AS	-	F	232	
Series		Classification	Function	
		F: Function card	232: RS-232 422: RS-422 485: RS-485 COPM: CANopen	2AD: 2-channel analog input 2DA: 2-channel analog output EN02: Ethernet PFN02: PROFINET

Power Supply Module

AS-PS02

AS	-	PS	02
Series		Classification	Function
		PS: Power supply	02: AC Input (100~240 V) 02A: AC Input (100~240 V) + DC Output (24 V, 0.5 A)

Product Models and Specifications

AS Series CPU module
- AS300 CPU
- AS200 CPU

High-density I/O expansion accessories
- UC-ET010-24D
- UB-10-ID16A

Power supply module
- AS-PS02
- AS-PS02A

AS Series programming software
- ISPSoft 3.0

USB

Ethernet

RS-485

Delta Industrial Ethernet Solutions IES Series

RS-485 ports x 2
- Serial communication port

Function card x 2
- AS-F232
- AS-F422
- AS-F485
- AS-F2AD
- AS-F2DA
- AS-FCOPM

I/O modules
- Digital I/O module
- Analog I/O module
- Industrial network module

H: 88mm
D: 78mm

CPU Module

*1: Needs CANopen function card

AS300 CPU

AS300 Series CPU standard specification				
Program capacity 128k steps	Basic instruction 25ns	I/O capability: 1,024 Expansion modules: 32		
USB / RS-485 x 2 / EtherNet	Micro SD Card	Function card x 2	EtherNet/IP Modbus CANopen remote I/O(*1)	CANopen DS301 Position Control(*1)
Model	**Built-in I/O**	**High speed output**	**High speed input**	
AS332T-A AS332P-A	16DI / 16DO	6 axes 200 kHz pulse output	6 channels 200 kHz high-speed counters	
AS324MT-A (Differential)	12DI / 12DO	2 axes + 4 axes 200 kHz pulse output	2 channels + 4 channels 200 kHz high-speed counters	
AS320T-B AS320P-B	8DI / 12DO	6 axes 200 kHz pulse output	4 channels 200 kHz high-speed counters	
AS300N-A	-	-	-	

AS200 CPU

AS200 Series CPU standard specification			
Program capacity 64k steps	Basic instruction 25ns	I/O capability: 1,024 Expansion modules: 32	
USB / RS-485 x 2 / EtherNet / CANopen	Micro SD Card	EtherNet/IP, Modbus CANopen remote I/O	CANopen DS301 Position Control
Model	**Built-in I/O**	**High speed output**	**High speed input**
AS228T-A AS228P-A AS228R-A	16DI / 12DO	6 axes 200 kHz pulse output	4 channels 200 kHz high-speed counters
AS218TX-A AS218PX-A AS218RX-A	8DI / 6DO 2AI / 2AO	3 axes 200 kHz pulse output	4 channels 200 kHz high-speed counters

Power Supply AS-PS02	Power Supply AS-PS02A
Input 100 V$_{AC}$ ~ 240 V$_{AC}$	Input 100 V$_{AC}$ ~ 240 V$_{AC}$
24 V$_{DC}$, 2A (for internal bus)	24 V$_{DC}$, 1.5A (for internal bus) 24 V$_{DC}$, 0.5A (for external I/O)

Product Specifications

Model	AS332T-A AS332P-A	AS324MT-A	AS320T-B AS320P-B	AS300N-A	AS228T-A AS228P-A AS228R-A	AS218TX-A AS218PX-A AS218RX-A
Programming Languages	Ladder Diagram (LD), Structured Text (ST), Continuous Function Chart (CFC), Sequential Function Chart (SFC)					
Instruction Processing Speed — LD Instruction	25 ns					
MOV Instruction	0.15 μs					
Elementary Arithmetic for Integer	0.92 μs ~ 1.02 μs					
Elementary Arithmetic for Floating Point	1.69 ~ 1.85 μs					
Program Capacity	128k steps				64k steps	
Memory Capacity — Data (D)	64k words (including 30k user-defined, 30k software configuration and 4k special registers)					
Extension (FR)	64k words (user parameter storage)					
Function Card	The CPUs support up to 2 function cards				-	
Max. Extension Modules	32 modules (max. 16 analog modules / 4 communication modules)					
Max. Number of Inputs / Outputs	1,024 points (input & output)					
CPU Built-in Inputs / Outputs	16DI / 16DO	12DI / 12DO	8DI / 12DO	-	16DI / 12DO	8DI / 6DO, 2AI / 2AO
CPU Built-in Differential Inputs / Outputs	-	4 Inputs + 4 Outputs	-			
Inputs / Outputs — X	1,024 inputs (X0.0 ~ X63.15)					
Y	1,024 outputs (Y0.0 ~ Y63.15)					
Bit Devices — M	8,192 bits (M0 ~ M8191)					
S	2,048 bits (S0 ~ S2047)					
Timer — T	512 (T0 ~ T511)					
16-bit Counter — C	512 (C0 ~ C511)					
32-bit Counter — HC	256 (HC0 ~ HC255)					
Pulse Output	Open collector: 6 axes, 200 kHz	Open collector: 4 axes, 200 kHz Differential: 2 axes, 4 MHz	Open collector: 6 axes, 200 kHz	-	Open collector: 6 axes, 200 kHz	Open collector: 3 axes, 200 kHz
High-Speed Counter	General: 6 CHs, 200 kHz	General: 4 CHs, 200 kHz Differential: 2 CHs, 4 MHz	General: 4 CHs, 200 kHz	-	General: 4 CHs, 200 kHz	General: 4 CHs, 200 kHz
DO Type	AS332T-A: NPN AS332P-A: PNP	Diff. / NPN	AS320T-B: NPN AS320P-B: PNP	-	AS228T-A: NPN AS228P-A: PNP AS228R-A: Relay	AS218TX-A: NPN AS218PX-A: PNP AS218RX-A: Relay
Built-in Communication Port	USB, Ethernet, RS-485 x2				USB, Ethernet, RS-485 x2, CANopen	
Communication Protocol	Modbus, Modbus TCP, EtherNet/IP, CANopen (requires a CANopen function card)				Modbus, Modbus TCP, EtherNet/IP, CANopen	
Ethernet Connection Resource	Modbus (Client / Server): 32 / 32 EtherNet/IP (CIP): 32				Modbus (Client / Server): 16 / 16 EtherNet/IP (CIP): 16	

ADELTA

Product Specifications

Model	AS332T-A AS332P-A	AS324MT-A	AS320T-B AS320P-B	AS300N-A	AS228T-A AS228P-A AS228R-A	AS218TX-A AS218PX-A AS218RX-A
Data Backup (Without Battery) — **Program**	Flash ROM, rewritable up to 100,000 times					
Data Backup — **Latched Area**	MRAM, no rewriting limit					
CANopen DS301 — **Connectable Salve Stations**	Max. 64 points					
CANopen DS301 — **PDO Data Capacity** (Host)	Max. 2,000 bytes (Read & Write)					
CANopen DS301 — **PDO Data Capacity** (Slave)	Max. 8 PDO (Read & Write); Max. 8 bytes for each PDO					
Real-time Clock (RTC)	General Lithium button battery (CR1620)					
Self-Diagnosis Function	diagnoses CPU errors, built-in memory errors, and more					
Rated Input Current — **AS-PS02/AS-PS02A**	$110\,V_{AC} \sim 240\,V_{AC}$ (±10%)					
Rated Input Current — **CPU**	$24\,V_{DC}$ (±10%)					
Rated Input Current — **Extension modules**						

Electrical and Environmental Specifications

Item		Specifications
Internal Power Consumption	**CPU**	150 mA
	Extension Module	Digital relay output <150 mA, Other modules < 80 mA
Operating Temperature		-20~60°C
Storage Temperature		-40~80°C
Operating Humidity		5~95%, non-condensing
Storage Humidity		5~95%, non-condensing
Vibration		IEC 61131-2, IEC 60068-2-6 (TEST Fc); 5 Hz ≤ f ≤ 8.4 Hz, constant amplitude 3.5 mm; 8.4 Hz ≤ f ≤ 150 Hz, constant acceleration 1g
Shock		IEC 61131-2, IEC 60068-2-27 (TEST Ea); 15g peak, 11 ms duration, half-sine
Operating Environment		Non-corrosive gas
Installation		Inside of the control panel
Pollution Degree		2
Protection Rating		IP20

Ethernet Specifications

Item			AS300 Series	AS200 Series	Note
Protocol			Modbus TCP, EtherNet/IP, SMTP, HTTP		Supports all protocols at the same time
Modbus TCP	Connection (Server)		32	16	
	Connection (Client)		32	16	
	RTU-EN01 Connection		4	4	
Socket	TCP Connection		4	2	
	UDP Connection		4	2	
SMTP	E-mail Connection		4	2	
EtherNet/IP	Operation Mode		Scanner/Adapter		
	CIP_IO Connection	CIP Connection	32 (Client+Server)	16 (Client+Server)	Shared with IO Connection
		TCP Connection	16 (Client+Server)	8 (Client+Server)	Shared with IO Connection
		Requested Packet Interval (RPI)	5 ms ~ 1,000 ms		Default: 20 ms
		Max. Performance	3,000 pps		
		Max. Capacity per Connection	500 bytes		
	CIP_Explicit Message	Class 3 (Connected Type)	32 (Servers), shared with UCMM	16 (Servers), shared with UCMM	Shared with IO Connection
		UCMM (Non-Connected Type)	32 (Clients + Servers), shared with Class 3	16 (Clients + Servers), shared with Class 3	Shared with IO Connection
		Supported CIP Objects	Identity, Message Router, Assembly, Connection Manager, Port, TCP/IP interface, Ethernet link, Vendor specific		
	CIP_Produced TAG	Max. CIP Connections	32 (Servers)	16 (Servers)	Shared with IO Connection
		Max. Capacity	400 bytes		
		Requested Packet Interval (RPI)	5 ms ~ 1000ms		
	CIP_Consumed TAG	Max. CIP Connections	32 (Clients + Servers)	16 (Clients + Servers)	Shared with IO Connection
		Max. capacity	400 bytes		
		Requested Packet Interval (RPI)	5 ms ~ 1000ms		
	AS00SCM (RTU) + AS-FEN02 Connection Nodes		15	8	AS RTU Mode

Please visit Delta's official website for selection

AS Series I/O Modules

■ Digital I/O Modules (Input)

8 inputs	16 inputs	32 inputs	64 inputs
Faster wiring terminal block	Faster wiring terminal block	High-density MIL terminal block	High-density MIL terminal block
AS08AM10N-A	AS16AM10N-A	AS32AM10N-A	AS64AM10N-A

Rated input voltage
5~24 V_{DC}

Response time
1 ms

Filter function
1~20 ms

Screwless removable terminal block
8 / 16 inputs

■ Digital I/O Modules (Output)

8 outputs	8 outputs	8 outputs	32 outputs
Faster wiring terminal block Transistor output NPN (Sink)	Faster wiring terminal block Relay output	Faster wiring terminal block Transistor output PNP (Source)	High-density MIL terminal block Transistor output NPN (Sink)
AS08AN01T-A	AS08AN01R-A	AS08AN01P-A	AS32AN02T-A

NPN (Sink) or PNP (Source) module

Response time
1 ms (Transistor)
10 ms (Relay)

Screwless removable terminal block
8 / 16 outputs

16 outputs	16 outputs	16 outputs	64 outputs
Faster wiring terminal block Transistor output NPN (Sink)	Faster wiring terminal block Relay output	Faster wiring terminal block Transistor output PNP (Source)	High-density MIL terminal block Transistor output NPN (Sink)
AS16AN01T-A	AS16AN01R-A	AS16AN01P-A	AS64AN02T-A

Digital I/O Modules (Mixed)

16 inputs / outputs	16 inputs / outputs	16 inputs / outputs
Faster wiring terminal block 8 inputs / 8 transistor outputs NPN (Sink)	Faster wiring terminal block 8 inputs 8 relay outputs	Faster wiring terminal block 8 inputs / 8 transistor outputs PNP (Source)
AS16AP11T-A	AS16AP11R-A	AS16AP11P-A

NPN (Sink) or PNP (Source) module	
Rated input voltage 5~24 V$_{DC}$	Filter function 1~20 ms
Screwless removable terminal block	
Response time 1 ms (Transistor) 10 ms (Relay)	

Analog I/O Modules

4 channels	8 channels	8 channels	4 channels	6 channels
Analog input	Analog input	Analog input	Analog output	Analog input / output
AS04AD-A	AS08AD-B New	AS08AD-C New	AS04DA-A	AS06XA-A

Conversion time 2 ms / channel	50 / 60 Hz filter	A: Voltage and current B: Voltage C: Current	Resolution AI: 16-bit AO: 12-bit
Accuracy ±0.2%	4 / 6 / 8 CH	Module monitoring / configuration	Differential inputs

Load Cell Module

2 channels
AS02LC-A

Functions		
50 / 60 Hz filter	High-speed dynamic measurement	2 channels of independent sampling
Accuracy 0.4% full range	2 CH	Connectable to 4-wire / 6-wire load cell sensor
full range		
Filter function	Multiple-point calibration	Online monitoring / configuration

Pulse Unit Modules

2 channels	4 channels
Differential	Open Collector
AS02PU-A New	AS04PU-A New

Input: 200 kHz
Output: 200 kHz
Open Collector / Diff.
2 / 4 CH
Support Motion APIs

Δ NELTA

AS Series I/O Modules

■ Temperature Measurement Modules

4 channels	6 channels
PT, NI temperature sensor	PT, NI temperature sensor
AS04RTD-A	AS06RTD-A New

Conversion time 200 ms / channel		Resolution 0.1°C / 0.1°F	Wire breaking detection
Overall accuracy ±0.1%	50 / 60 Hz filter	Module monitoring / configuration	4 / 6 CH
Pt100 / Ni100 / Pt1000 / Ni1000 / JPt100 / LG-Ni1000 / Cu50 / Cu100, resistor 0～300 Ω, 0～3,000 Ω			

4 channels	8 channels
TC temperature sensor	TC temperature sensor
AS04TC-A	AS08TC-A New
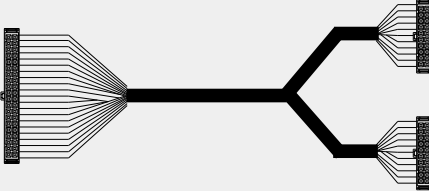
Conversion time 200 ms / channel		Resolution 0.1°C / 0.1°F	Disconnection detection
Overall accuracy ±0.5%	50 / 60 Hz filter	Module monitoring / configuration	4 / 8 CH
J, K, R, S, T, E, N, B type thermocouple; ±100 mV			

■ Communication Modules
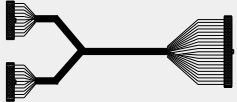
2 COM ports
AS00SCM-A
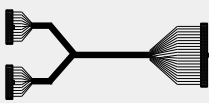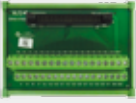
COM port	RS-232C	RS-422	RS-485	CANopen
Function	Selectable COM ports; supporting standard Modbus protocol and user-defined protocol			Delta communication protocol
Software	SCMSoft	Data exchange table for quick setup		Real-time monitoring on communication status

DeviceNet
AS01DNET-A New

COM port	DeviceNet
Function	DeviceNet protocol (master / slave) and support RTU mode
Software	DeviceNet Builder
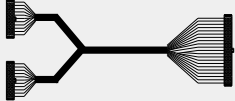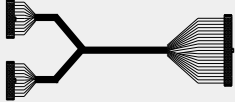
Accessory Selection for High-density Modules
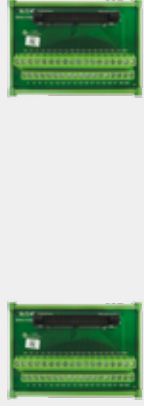
Model Name

AS332T-A AS332P-A AS324MT-A	UC-ET010-24D (1M) UC-ET020-24D (2M) UC-ET030-24D (3M)	UB-10-ID16A

UB-10-ID16A (NPN / PNP)
UB-10-OR16A (NPN to Relay)
UB-10-OR16B (PNP to Relay)

or

Model Name

UB-10-ID16A	UC-ET010-24D (1M) UC-ET020-24D (2M) UC-ET030-24D (3M)	AS32AM10N-A	UC-ET010-24B (1M) UC-ET020-24B (2M) UC-ET030-24B (3M)	UB-10-ID32A

Model Name

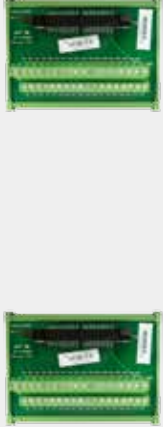| UB-10-ID16A or UB-10-OR16A (Relay)	UC-ET010-24D (1M) UC-ET020-24D (2M) UC-ET030-24D (3M)	AS32AN02T-A	UC-ET010-24B (1M) UC-ET020-24B (2M) UC-ET030-24B (3M)	UB-10-OT32A

ΔNELTA

Accessory Selection for High-density Modules

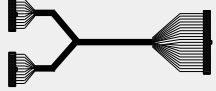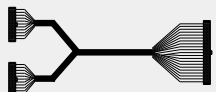| Model Name				
UB-10-ID16A	UC-ET010-24D (1M) UC-ET020-24D (2M) UC-ET030-24D (3M)	AS64AM10N-A	UC-ET010-24B (1M) UC-ET020-24B (2M) UC-ET030-24B (3M)	UB-10-ID32A

Model Name				
UB-10-ID16A or UB-10-OR16A (Relay)	UC-ET010-24D (1M) UC-ET020-24D (2M) UC-ET030-24D (3M)	AS64AN02T-A	UC-ET010-24B (1M) UC-ET020-24B (2M) UC-ET030-24B (3M)	UB-10-OT32A

Dimensions

Dimensions are in mm

AS332T-A, AS332P-A, AS324MT-A
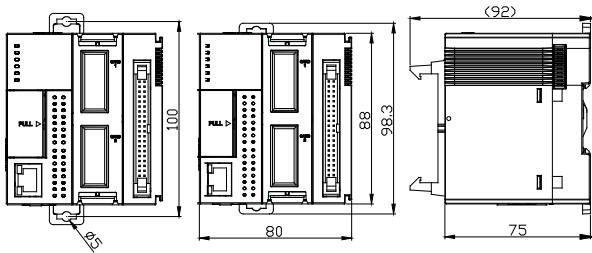
AS300N-A New
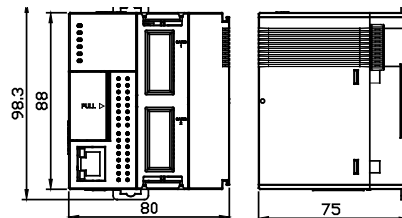
AS320T-B New **, AS320P-B** New
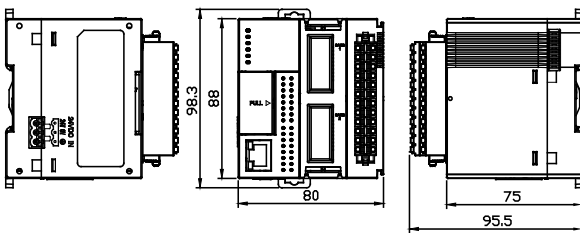
AS228T-A New **, AS228P-A** New **, AS228R-A** New
AS218TX-A New **, AS218PX-A** New **, AS218RX-A** New
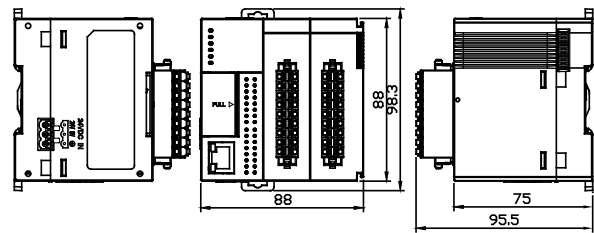
Digital I/O Modules

Dimensions are in mm

AS08AM10N-A, AS08AN01R-A,
AS08AN01T-A, AS08AN01P-A
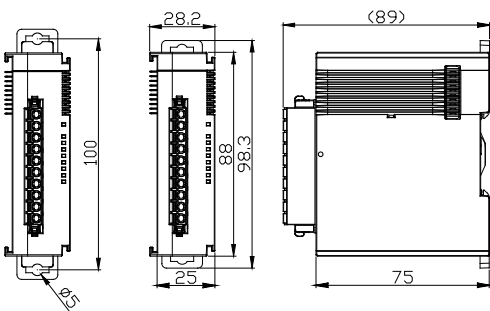
AS16AM10N-A, AS16AN01R-A, AS16AN01T-A,
AS16AN01P-A, AS16AP11R-A, AS16AP11T-A,
AS16AP11P-A
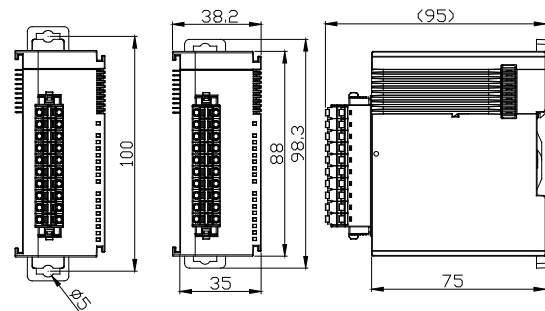
AS32AM10N-A, AS32AN02T-A
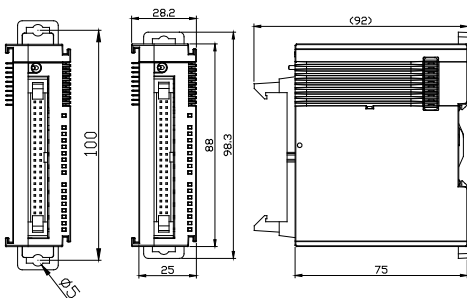
AS64AM10N-A, AS64AN02T-A
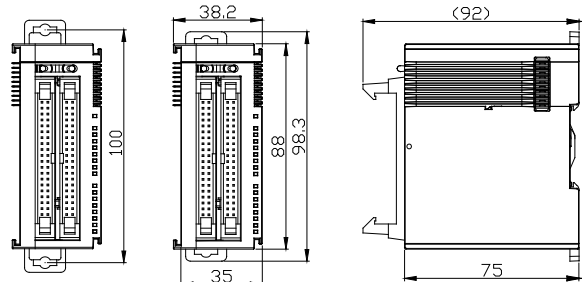
Dimensions

Dimensions are in mm

AS-PS02, AS-PS02A
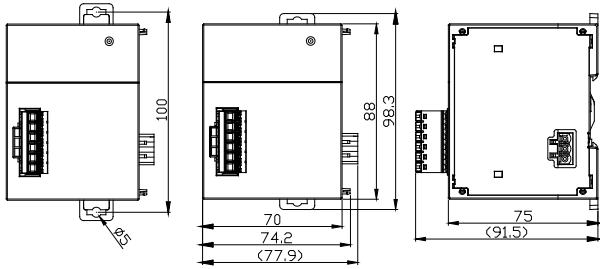
Pulse Unit Module Dimensions are in mm

AS02PU-A New **, AS04PU-A** New
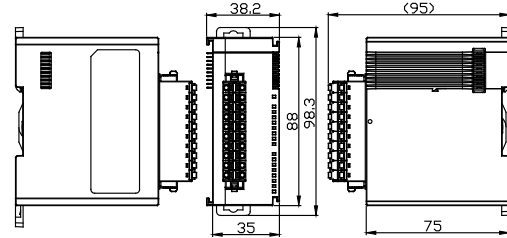
Communication Modules Dimensions are in mm

AS00SCM-A
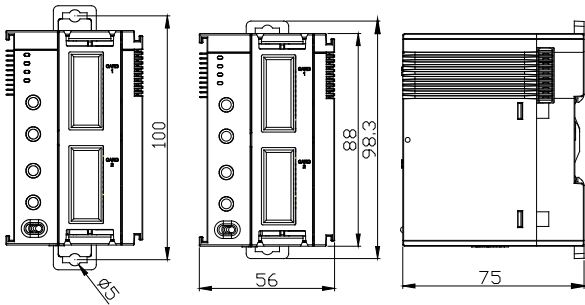
AS01DNET-A New
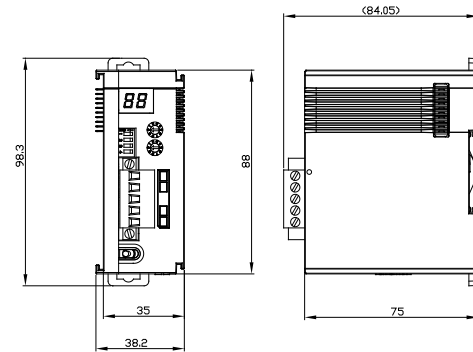
Analog Modules Dimensions are in mm

AS02LC-A, **AS04AD-A**, **AS04DA-A**, **S04TC-A**,
AS04RTD-A, **AS06XA-A**, **AS08AD-B** New **, AS08AD-C** New
, AS06RTD-A New **, AS08TC-A** New
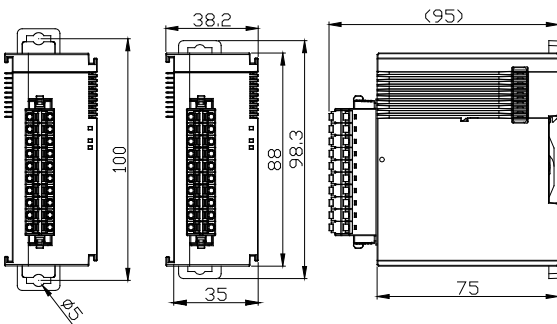
Connector Converter Dimensions are in mm

UB-10-IO32D New
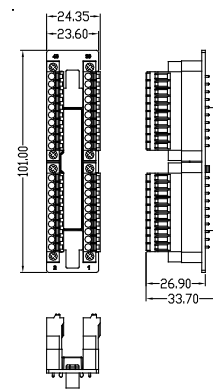
Dimensions are in mm

AS-F232
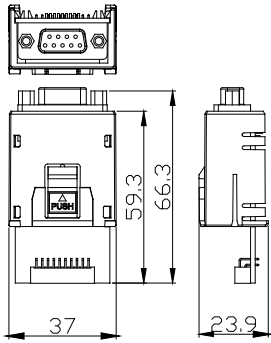
AS-FCOPM
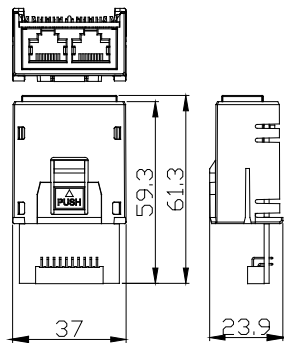
AS-F2AD, AS-F2DA, AS-F422, AS-F485

AS-FEN02 New
AS-FPFN02 New

59.3 66.3

37   23.9

59.3 61.3

37   23.9

59.3 60.8

37   23.9

88

25.2
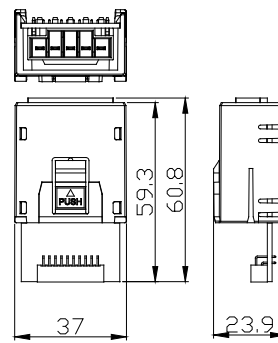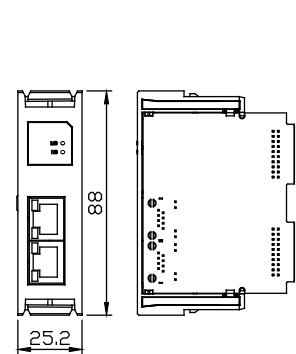
Installation Notes

Dimensions are in mm

PULL ▷

35   **Din-Rail Size**

Suggested to install left / right-end stopper

120~140 mm
75 mm

160~180 mm
75 mm

140~160 mm
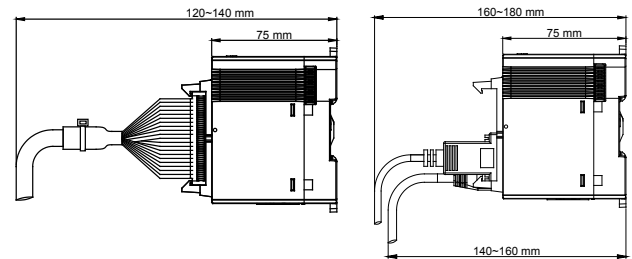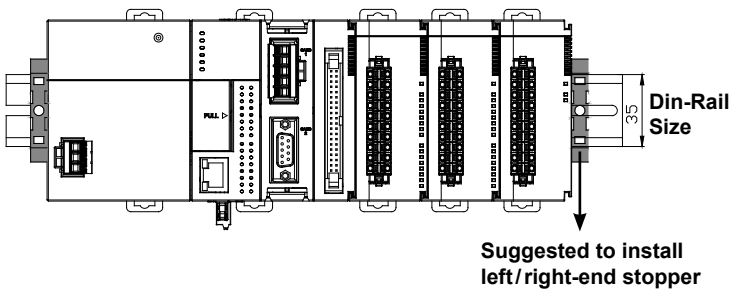
Cable (MIL)

Dimensions are in mm

UC-ET010-24D (1 M), UC-ET020-24D (2 M), UC-ET030-24D (3 M)
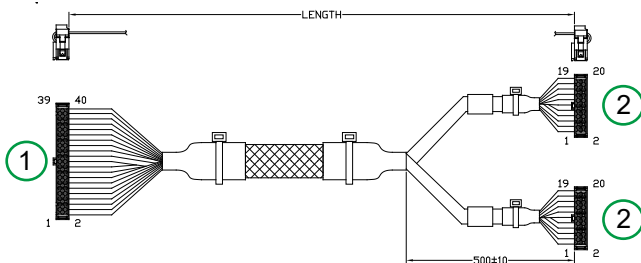
UC-ET010-24B (1 M), UC-ET020-24B (2 M), UC-ET030-24B (3 M)

LENGTH

39   40
①
1   2

19   20
②
1   2

19   20
②
1   2

500±10

LENGTH

39   40
①
1   2

39   40
②
1   2
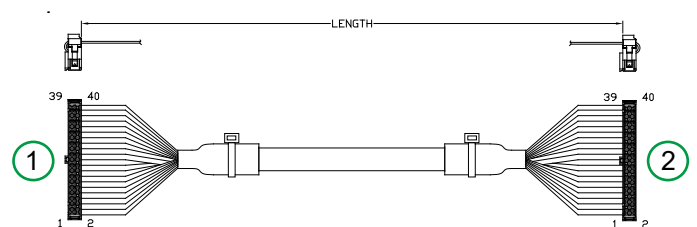
Serial	Name	Description
①	40-pin terminal	Connect to modules
②	20-pin terminal	Connect to external terminal modules UB-10-ID16A or UB-10-OR16A or UB-10-OR16B

Serial	Name	Description
①	40-pin terminal	Connect to modules
②	40-pin terminal	Connect to external terminal modules UB-10-ID32A or UB-10-OT32A

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Dimensions

Dimensions are in mm

UB-10-OR16A, UB-10-OR16B

113.00
87.00
55.30

UB-10-OT32A

113
87
53.1

UB-10-ID16A

67.00
87.00
53.60

UB-10-ID32A

113.00
87.00
53.60
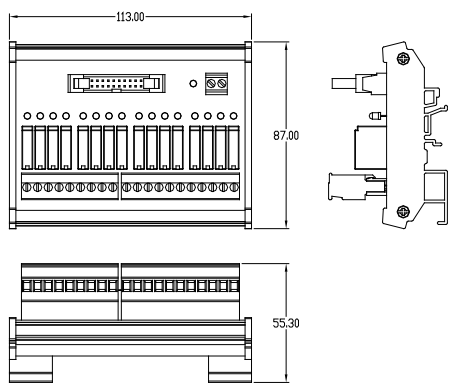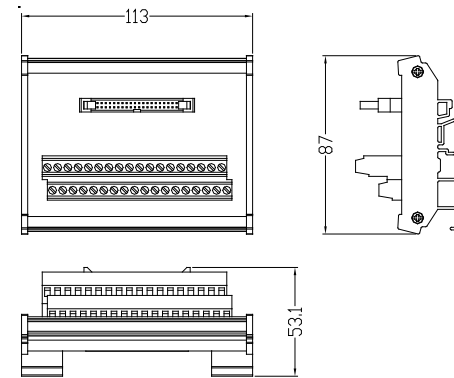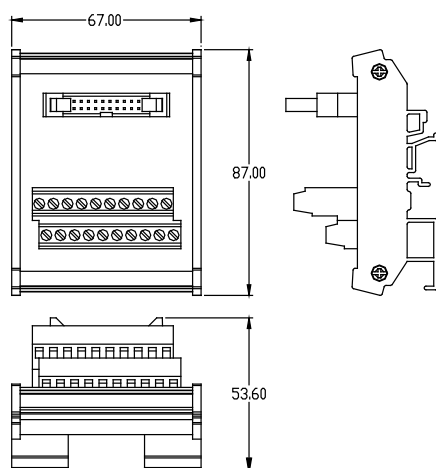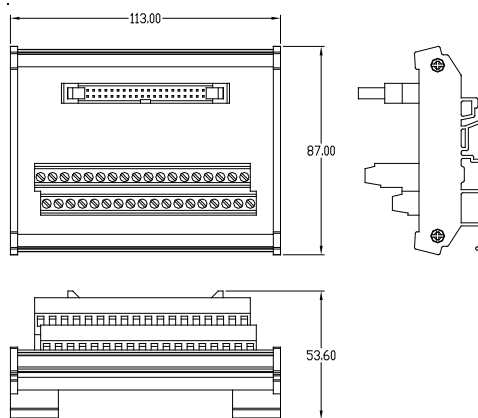
Auxiliary Connected Power Module

Dimensions are in mm

AS-ATXB

88
104
75
18
26
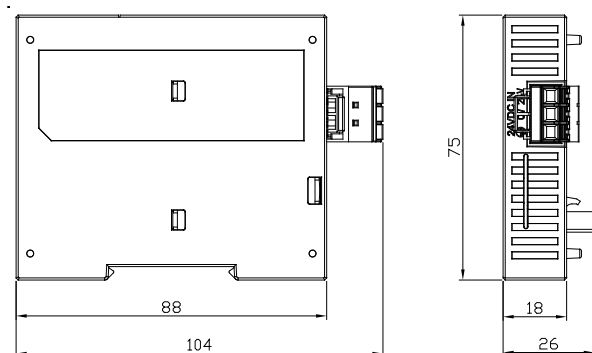
Ordering Information

■ CPU Module

Name	Model	Instruction Speed / Performance	Memory / CPU Clock	Max. Inputs & Outputs / Extension Module (Max. Extension Racks)	Memory Card	Certification
CPU	All models	LD: 25 ns MOV: 0.15 μs / 40k steps / 1ms (LD 40%, MOV 60%)	RAM: 2 MB ROM: 4 MB CPU clock: 400 MHz	1,024 inputs & outputs / 32 modules (Max. 15 extension racks)	Micro SD Max. 32GB	CE / UL

Name	Model	Program Capacity	Built-in I/O	DO Type	Terminal Block	High-Speed Counter	Pulse-train Output	Built-in Communication	Function Card Slot
CPU	AS332T-A	128k steps	16DI / 16DO	NPN	MIL	6 CHs, 200 kHz	6 Axes, 200 kHz (12 CHs, 200 kHz)	USB RS-485*2 Ethernet	2
	AS332P-A			PNP					
	AS324MT-A		12DI / 12DO	Diff. / NPN		2 CHs, 4 MHz (Diff.) 4 CHs, 200 kHz	2 Axes, 4 MHz (Diff.) 4 Axes, 200 kHz		
	AS320T-B New		8DI / 12DO	NPN	EU	4 CHs, 200 kHz	6 Axes, 200 kHz (12 CHs, 200 kHz)		
	AS320P-B New			PNP					
	AS300N-A New		-	-	-	-	-		
	AS228T-A New	64k steps	16DI / 12DO	NPN	EU	4 CHs, 200 kHz	6 Axes, 200 kHz (12 CHs, 200 kHz)	USB RS-485*2 Ethernet CANopen	-
	AS228P-A New			PNP					
	AS228R-A New			Relay			-		
	AS218TX-A New		8DI / 6DO 2AI / 2AO (*1)	NPN		4 CHs, 200 kHz	3 Axes, 200 kHz (6 CHs, 200 kHz)		
	AS218PX-A New			PNP					
	AS218RX-A New			Relay			-		

Note: The specifications of the built-in AIO are the same as AS-F2AD / AS-F2DA function cards.

■ Software

Product Name	License	Descriptions	Supported Device
ISPSoft [V3]	Free	PLC programming software	AS Series, AH Series, DVP Series
COMMGR [V1]	Free	Communication management software	AS Series, AH Series, DVP Series
DCISoft [V1]	Free	Ethernet configuration software	AH series Ethernet / serial communication modules, AS series SCM module, DVP series built-in Ethernet PLCs, DVP series Ethernet / serial communication modules, IFD series Ethernet modules
	Free	SCM serial communication module planning software	AS Series, AH Series, DVP Series SCM communication modules
CANopen Builder [V5]	Free	CANopen configuration software / motion control programming software	AS Series, AH Series, DVP Series built-in CANopen communication modules
EIP Builder [V1]	Free	EtherNet/IP configuration software	AS Series, AH Series, DVP Series built-in Ethernet communication modules
Delta OPC [V2] (HASP-20-OPC01)	Hardware License (USB)	Delta OPC Server	AS Series, AH Series,

■ Power Supply Module

Name	Model	Input	Output	Certification
Power Supply Module	AS-PS02	100 ~ 240 V_AC	24 V_DC, 2A (for modules on the rack)	CE / UL
	AS-PS02A		24 V_DC, 1.5A (for modules on the rack) 24 V_DC, 0.5A (for external I/O)	

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Ordering Information

■ Communication Module

Name	Model	Communication Card Installation	Power Consumption (Internal)	Specifications	Certification
Communication Extension Module	AS00SCM-A	2	0.6 W	• Serial communication: RS-232 / RS-422 / RS-485 • Provide CANopen communication interface for extension racks	CE / UL
DeviceNet Communication Module	**New** AS01DNET-A	-	0.8 W	• DeviceNet protocol • Supports master / slave modes • Supports RTU function	

■ Digital I/O Module

Name	Model	I/O	Signals	Terminal Block Type	Power Consumption (Internal)	Certification
Input Module	AS08AM10N-A	8	24 V_{DC} 5 mA	Removable terminal block	0.72 W	CE / UL
	AS16AM10N-A	16			0.72 W	
	AS32AM10N-A	32		MIL	0.48 W	
	AS64AM10N-A	64			0.72 W	

Name	Model	I/O	Signals	Terminal Block Type	Power Consumption (Internal)	Specifications	Certification
Output Module	AS08AN01R-A	8	240 V_{AC} 24 V_{DC}	Removable terminal block	1.7 W	Relay	CE / UL
	AS16AN01R-A	16			3.4 W	Relay	
	AS08AN01T-A	8	5～30 V_{DC} 0.5A		0.72 W	Transistor NPN (Sink)	
	AS08AN01P-A	8			1.4 W	Transistor PNP (Source)	
	AS16AN01T-A	16			1.4 W	Transistor NPN (Sink)	
	AS16AN01P-A	16			1.4 W	Transistor PNP (Source)	
	AS32AN02T-A	32	5～30 V_{DC} 0.1A	MIL	0.72 W	Transistor NPN (Sink)	
	AS64AN02T-A	64			1.44 W	Transistor NPN (Sink)	

Name	Model	I/O	Signals		Terminal Block Type	Power Consumption (Internal)	Specifications	Certification
			Input	Output				
Input / Output Module	AS16AP11R-A	16 (8 in / 8 out)	24 V_{DC} 5 mA	240 V_{AC} 24 V_{DC} 2A	Removable terminal block	1.9 W	Relay	CE / UL
	AS16AP11T-A	16 (8 in / 8 out)		5～30 V_{DC} 0.5A		0.7 W	Transistor NPN (Sink)	
	AS16AP11P-A	16 (8 in / 8 out)				0.7 W	Transistor PNP (Source)	

■ Analog I/O Module

Name	Model	Channel	Mode	Terminal Block Type	Power Consumption (Internal)	Specifications	Certification
Analog Input Module	AS04AD-A	4	1～5V 0～5V -5～5V 0～10V -10～10V 4～20mA 0～20mA -20～20mA	Removable terminal block	1.2W/2.5W	• Hardware resolution: 16-bit • Single channel on/off setting to enhance overall conversion efficiency • Conversion time: 2ms/channel • Wire break detection at1～5V, 4～20mA modes	CE/UL
	New AS08AD-B	8	1～5V 0～5V -5～5V 0～10V -10～10V				
	New AS08AD-C		4～20mA 0～20mA -20～20mA				
Analog Output Module	AS04DA-A	4	0～10V -10～10V 4～20mA 0～20mA		1.2W/3W	• Hardware resolution: 12-bit • Single channel on/off setting • Conversion time: 250μs/channel	
Analog Input/ Output Module	AS06XA-A	Input: 4 Output: 2	• Input: 1～5V 0～5V -5～5V 0～10V -10～10V 4～20mA 0～20mA -20～20mA • Output: 0～10V -10～10V 4～20mA 0～20mA		1.2W/2.5W	• Input resolution: 16-bit • Output resolution: 12-bit • Single channel on/off setting to enhance overall conversion efficiency • Conversion time: 2ms/channel • Wire break detection at 1～5V, 4～20mA modes	

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Ordering Information

▪ Temperature Measurement Module

Name	Model	Channel	Mode	Terminal Block Type	Power Consumption (Internal)	Specifications	Certification
RTD Temperature Measurement Module	AS04RTD-A	4	Pt100 Ni100 Pt1000 Ni1000 JPt100 LG-Ni1000 Cu50 Cu100 Input Impendence 0~300Ω 0~3,000Ω	Removable terminal block	2W/1W	• Resolution 0.1°C/0.1°F • Conversion time: 200 ms/channel • Overall accuracy RTD: ±0.1% TC: ±0.5% • Wire break detection • Module monitoring, setting	CE/UL
	New AS06RTD-A	6					
Thermocouple Temperature Measurement Module	AS04TC-A	4	J,K,R,S, T,E,N,B -100~+100 mV				
	New AS08TC-A	8					

▪ Load Cell Module

Name	Model	Channel	Mode	Terminal Block Type	Power Consumption (Internal)	Specifications	Certification
Load Cell Module	AS02LC-A	2	0~1 0~2 0~4 0~6 0~20 0~40 0~80 mV/V	Removable terminal block	0.75W/3W	• Resolution: 24-bit for hardware (ADC), 32-bit for data output • 4-wire/6-wire load cell sensor • Selectable signal input ranges • LCSoft software configuration • High-speed dynamic measurement • 50/60 Hz active filtering	CE/UL

■ Pulse Unit Module

Name	Model	Channel	Power Consumption (Internal)	Specifications	Certification
Pulse Unit Module	**New** AS02PU-A[*1]	2	1.5 W	• Differential • 200 kHz • Supports motion APIs	CE / UL
	New AS04PU-A[*1]	4	1.5 W	• Open collector • 200 kHz • Supports motion APIs	

Note 1: Please contact our distributors for release date

■ Function Cards

Name	Model	Channel	Specifications	Certification
Communication Card	AS-F232	1	Serial COM, RS-232 interface, slave / host mode	CE
	AS-F422	1	Serial COM, RS-422 interface, slave / host mode	
	AS-F485	1	Serial COM, RS-485 interface, slave / host mode	
	AS-FCOPM	1	• CANopen port, support DS301, AS Series remote control or Delta servo motor control • Built-in switchable terminal resistor (120 Ω)	
	New AS-FEN02	1	Ethernet port, RJ45 x2 (Switch function), supports EtherNet/IP (Adapter mode) / Modbus TCP	
	New AS-FPFN02[*1]	1	PROFINET port, RJ45 x2 (Switch function), supports PROFINET (Slave mode)	
Analog I/O Card	AS-F2AD	2	2-channel analog input 0～10 V (12-bit resolution), 4～20 mA (11-bit resolution), conversion time: 3 ms / channel	
	AS-F2DA	2	2-channel analog Output 0～10 V, 4～20　mA (12-bit resolution), conversion time: 2 ms / channel	

Note 1: Please contact our distributors for release date

Ordering Information

■ Accessories

Name	Model	Descriptions	Specifications		Applicable Module
			Length	Connector/ Terminal Block Type	
I/O Cable	UC-ET010-24B	I/O cable for connecting I/O modules and external terminal modules	1 m	I/O extension cable (MIL connector IDC40 to IDC40) (Shielded)	AS32AM,AS64AM, AS32AN,AS64AN
	UC-ET010-24D		1 m	I/O extension cable (MIL connector IDC40 to IDC20 x2) (Shielded)	AS332T,AS332P, AS324MT,AS32AM, AS64AM,AS32AN, AS64AN
	UC-ET020-24B		2 m	I/O extension cable (MIL connector IDC40 to IDC40) (Shielded)	AS32AM,AS64AM, AS32AN,AS64AN
	UC-ET020-24D		2 m	I/O extension cable (MIL connector IDC40 to IDC20 x2) (Shielded)	AS332T,AS332P, AS324MT,AS32AM, AS64AM,AS32AN, AS64AN
	UC-ET030-24B		3 m	I/O extension cable (MIL connector IDC40 to IDC40) (Shielded)	AS32AM,AS64AM, AS32AN,AS64AN
	UC-ET030-24D		3 m	I/O extension cable (MIL connector IDC40 to IDC20 x2) (Shielded)	AS332T,AS332P, AS324MT,AS32AM, AS64AM,AS32AN, AS64AN
Cables	UC-DN01Z-01A[*1]	CANopen/ DeviceNet cables	305.0 m	Thick/Trunk Cable	AS200 CPU, AS01DNET-A TAP-CN01, TAP-CN02, TAP-CN03
	UC-DN01Z-02A[*1]		305.0 m	Thin/Drop Cable	
	UC-CMC003-01A	CANopen/ DeviceNet/ DMCNET cables	0.3 m	RJ45	AS-FCOPM TAP-CN03
	UC-CMC005-01A		0.5 m	RJ45	
	UC-CMC010-01A		1.0 m	RJ45	
	UC-CMC015-01A		1.5 m	RJ45	
	UC-CMC020-01A		2.0 m	RJ45	
	UC-CMC030-01A		3.0 m	RJ45	
	UC-CMC050-01A		5.0 m	RJ45	
	UC-CMC100-01A		10.0 m	RJ45	
	UC-CMC200-01A		20.0 m	RJ45	

Note:
- Ordering unit: meter
- Not available in Taiwan

Accessories

Name	Model	Descriptions	Specifications		Applicable Module
			Length	Connector/Terminal Block Type	
External terminal module	UB-10-ID16A	External terminal module of digital module	--	16 inputs or outputs (MIL connector, 20Pin)	AS332T, AS332P, AS324MT, AS32AM, 64AM,AS32AN, AS64AN
	UB-10-ID32A			32 inputs (MIL connector, 40Pin)	AS32AM, AS64AM
	UB-10-OT32A			32 transistor outputs (MIL connector, for NPN output)	AS32AN, AS64AN
	UB-10-OR16A			16 relay outputs (MIL connector, for NPN output)	AS332T, AS32AN02T, AS64AN02T
	UB-10-OR16B			16 relay outputs (MIL connector, for PNP output)	AS332P
	UB-10-IO32D			Connector converter (MIL→Spring)	AS332T, AS332P, AS324MT, AS32AM, AS32AN
Terminal resistors	TAP-TR01	CANopen/DeviceNet terminal resistors (RJ45)			
Distribution box	TAP-CP01	CANopen/DeviceNet distribution Box	--	Power distribution box	
	TAP-CN01		--	1 for 2	
	TAP-CN02		--	1 for 4	
	TAP-CN03		--	1 for 4 (RJ45)	
Auxiliary Connected Power Module	AS-ATXB	Move the CPU power connector from left side to bottom side			
PLC programming cable	UC-PRG015-01A	Communication cable for PLC to PC	1.5m	PLC (mini USB)	All AS series CPU modules
	UC-PRG030-01A		3m	PLC (mini USB)	
	UC-PRG030-20A	Communication cable for PLC/HMI (RJ45) to PC	3m	PLC/HMI (RJ45)	

Starter Kit

Name	Model	Specifications
Delta PLC starter kit	UT-AS332-C	AS332T-A CPU, power module and other accessories

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