

# Model Name Explanation

## CPUs

### AS332T-A

AS	3	32		T		-	A
Series	Model	IO Pts. / Axis Qty.		Output Type / Motion Network			Type
	3: 300 2: 200 5 : 500 (Motion)	【200/300 CPU】 00: None 18: 18 pts. 20: 20 pts. 24: 24 pts. 28: 28 pts. 32: 32 pts.	【500 CPU】 16: 16 axes 24: 24 axes	【200/300 CPU】 N: None T: NPN P: PNP R: Relay MT: NPN+Diff.	【500 CPU】 C: CANopen E: EtherCAT		【300/500 CPU】 A: HDC terminal B: EU terminal  【200 CPU】 A: Basic

### AX-308EA0MA1T

AX-3	08	E	A0	MA1	T
Series	Axis Qty.	Motion Network	CPU Spec.	SYS Spec.	Output Type
CODESYS	08 : 8 axes	E : EtherCAT	A0 : Single core	MA1 : SoftMotion	T : NPN

## Digital I/O Modules

### 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: 0.5A transistor/2A relay output 2: 0.1A transistor output	N: No output T: NPN P: PNP R: Relay		A: Basic

## Analog I/O Modules

### 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

## Temperature & Load Cell Modules

### AS04RTD-A

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

## Function Cards

### 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 OPC02 : OPC-UA

## Motion Control Modules

### AS02PU-A

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

## Communication Modules

### AS00SCM-A

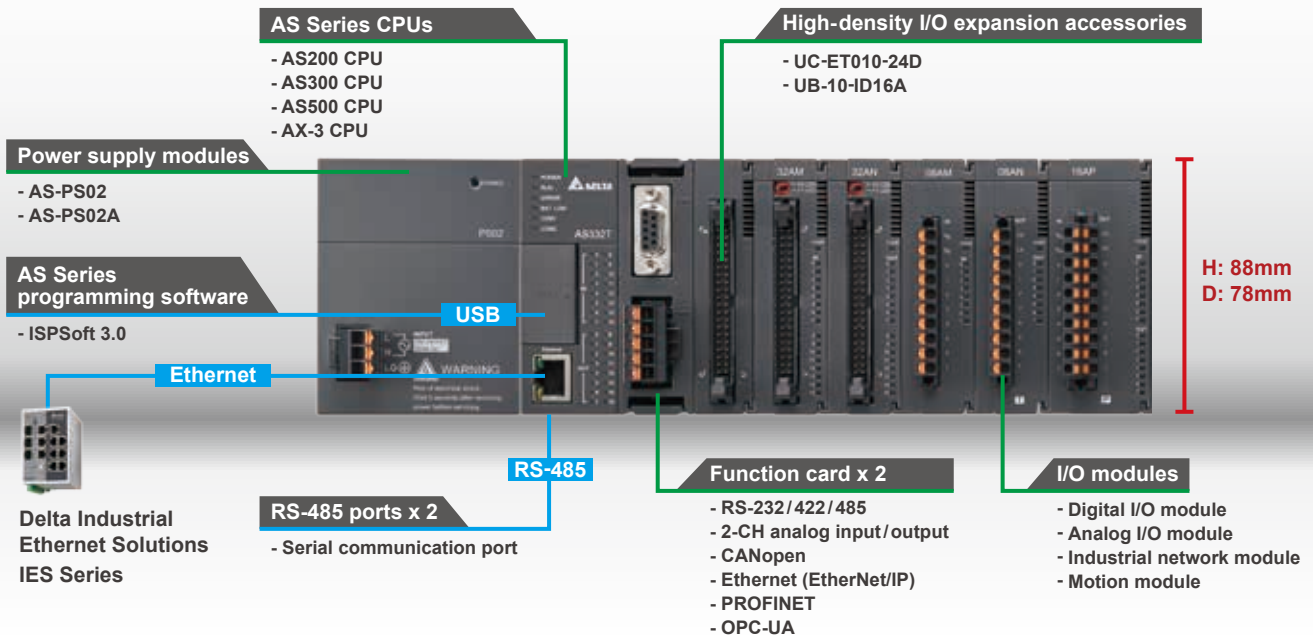
AS	00	SCM	-	A
Series	Function	Classification		Function
	00: Basement 01: Basic 04 : 4-CH	SCM: Serial DNET: DeviceNet SIL : IO-Link		A: Basic

## Power Supply Modules

### AS-PS02

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

# Product Models and Specifications



## CPUs

### AS500 CPUs



AS500 Series CPU Standard Specifications			
Program capacity 20 MB	1 GHz CPU	Expansion modules: 32	
USB/RS-232/485/Ethernet/CANopen	Micro SD Card	EtherNet/IP, Modbus CANopen	Advanced motion control
Model	Built-in I/O	Incremental Encoder	SSI Absolute Encoder
AS516E-B/AS524C-B	16DI/8DO	2 CHs	1 CH

### AS300 CPUs



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

# CPUs

## AS200 CPUs





AS200 Series CPU Standard Specifications			
Program capacity 64k steps	Basic instruction 25 ns	Real I/O capability: 1,024 pts   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	16 DI/12 DO	6 axes 200 kHz pulse output	4 channels 200 kHz high-speed counters
AS218TX-A/AS218PX-A/ AS218RX-A	8 DI/6 DO 2 AI/2 AO	3 axes 200 kHz pulse output	4 channels 200 kHz high-speed counters

## AX-3 CPU



AX-3 Series CPU Standard Specifications			
Program capacity 8 MB	Basic instruction 5 ns	Expansion modules: 32	
USB/RS-232/485/ Ethernet (1G)	Micro SD Card	EtherNet/IP, Modbus	Advanced motion control
Model	Built-in I/O	Encoder	High-speed Input / Output
AX-308EA0MA1T	16 DI/8 DO	Incremental encoder: 2 CHs SSI absolute encoder: 1 CH	200 kHz pulse output: 4 axes 200 kHz high-speed counters: 5 CHs

# Power Supply Modules

Power Supply Modules Specifications			
<b>AS-PS02</b> 	Input 100 V <sub>AC</sub> ~ 240 V <sub>AC</sub>	<b>AS-PS02A</b> 	Input 100 V <sub>AC</sub> ~ 240 V <sub>AC</sub>
	24 V <sub>DC</sub> , 2A (for internal bus)		24 V <sub>DC</sub> , 1.5A (for internal bus) 24 V <sub>DC</sub> , 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 $\mu$ s					
	Elementary Arithmetic for Integer	0.92 $\mu$ s ~ 1.02 $\mu$ s					
	Elementary Arithmetic for Floating Point	1.69 ~ 1.85 $\mu$ s					
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 Cards		The CPUs support up to 2 function cards				-	
Max. Extension Modules		32 modules (max. 16 analog modules/4 communication modules)					
Max. Number of Real Inputs/Outputs		1,024 points (input & output)					
CPU Built-in Inputs/Outputs		16 DI/16 DO	12 DI/12 DO	8 DI/12 DO	-	16 DI/12 DO	8 DI/6DO & 2AI/2AO
CPU Built-in Differential Inputs/Outputs		-	4 inputs + 4 outputs	-			
Input/Output Devices	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		<b>Open collector:</b> 6 axes, 200 kHz	<b>Open collector:</b> 4 axes, 200 kHz <b>Differential:</b> 2 axes, 4 MHz	<b>Open collector:</b> 6 axes, 200 kHz	-	<b>Open collector:</b> 6 axes, 200 kHz	<b>Open collector:</b> 3 axes, 200 kHz
High-Speed Counter		<b>General:</b> 6 CHs, 200 kHz	<b>General:</b> 4 CHs, 200 kHz <b>Differential:</b> 2 CHs, 4 MHz	<b>General:</b> 4 CHs, 200 kHz	-	<b>General:</b> 4 CHs, 200 kHz	<b>General:</b> 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 x 2				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	
Data Backup (Without Battery)	Program	Flash ROM, rewritable up to 100,000 times					
	Latched Area	MRAM, no rewriting limit					
CANopen DS301	Connectable Slave Stations	Max. 64 points					
	CPDO Data Capacity (Host)	Max. 2,000 bytes (Read & Write)					
	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		CPU errors, built-in memory errors, and more					
Rated Input Current	AS-PS02/AS-PS02A	110 V <sub>AC</sub> ~ 240 V <sub>AC</sub> ( $\pm$ 10%)					
	CPU	24 V <sub>DC</sub> ( $\pm$ 10%)					
	Extension modules						

# Product Specifications

Model		AS516E-B	AS524C-B	AX-308E
Programming Languages		Ladder Diagram (LD), Structured Text (ST)		Ladder Diagram (LD), Structured Text (ST), Continuous Function Chart (CFC), Sequential Function Chart (SFC), Function Block Diagram (FBD), Instruction List (IL)
Instruction Processing Speed	Boolean Operation	0.05 μs		5 ns
	MOV Instruction	0.11 μs		-
	Elementary Arithmetic for Integer	0.24 μs		5 ns
	Elementary Arithmetic for Floating Point	0.30 μs		33 ns
Program Capacity		20 MB		8 MB
Data Capacity		20 MB		16 MB
Max. Extension Modules		32 modules (max. 16 analog modules)		32 modules (max. 16 analog modules)
CPU Built-in Inputs/Outputs		16 DI/8 DO		
CPU Built-in Differential Inputs/Outputs		Incremental x2/SSI absolute x1		
I/O Devices	I (Input)	128 bytes		8,192 bytes
	Q (Output)	128 bytes		8,192 bytes
Memory Devices	M (Memory)	128k bytes		512k bytes
Pulse Output		-		<b>Open collector:</b> 4 axes, 200 kHz
High-Speed Counter		-		<b>General:</b> 5 CHs, 200 kHz
DO Type		NPN		
Built-in Communication Ports		USB, Ethernet, RS232, RS485, EtherCAT, CANopen	USB, Ethernet x2, RS232, RS485, CAN Motion, CANopen	USB, Ethernet (Switch), RS232, RS485, EtherCAT
Communication Protocols		Modbus, Modbus TCP, EtherNet/IP, EtherCAT, CANopen DS301	Modbus, Modbus TCP, EtherNet/IP, EtherCAT, CANopen DS301 & DS402	Modbus, Modbus TCP, EtherNet/IP, EtherCAT, OPC-UA (Server)
Ethernet Connection Resource		Modbus TCP (Client/Server): 16/16 EtherNet/IP (CIP): 8		Modbus TCP (Client+Server): 32 EtherNet/IP (CIP): Input=64; Output=64
Data Backup (Without Battery)	Program	Flash ROM, rewritable up to 100,000 times		
	Latched Area	MRAM, no rewriting limit		
EtherCAT/ CANopen	Connectable Slave Stations	EtherCAT: 16 axes (Delta servo only) CANopen DS301: 32	CAN Motion: 24 axes (Delta servo only) CANopen DS301: 32	EtherCAT: 8 axes + 64 nodes
	PDO Data Capacity (Host)	CANopen DS301: Max. 8 PDO (read & write)		-
	PDO Data Capacity (Slave)	CANopen DS301: Max. 8 PDO (read & write); Max. 8 bytes for each PDO		-
Real-time Clock (RTC)		General Lithium button battery (CR1620)		
Self-Diagnosis Function		CPU errors, built-in memory errors, and more		
Rated Input Current	AS-PS02/AS-PS02A	110 V <sub>AC</sub> ~ 240 V <sub>AC</sub> (±10%)		
	CPU	24 V <sub>DC</sub> (±10%)		
	Extension Modules			

## Electrical and Environmental Specifications

Item		Specifications
Internal Power Consumption	AS332T-A AS332P-A AS324MT-A AS320T-B AS320P-B	150 mA
	AS300N-A	125 mA
	AS228T-A AS228P-A	141.7 mA
	AS218TX-A AS218PX-A	204.2 mA
	AS228R-A	179.2 mA
	AS218RX-A	220.8 mA
	AX-308E	458.3 mA
	Extension Modules	Digital relay output < 150 mA, other modules < 80 mA
Operating Temperature		-20~60°C (AX Series CPU: -20~55°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	
<b>Protocols</b>		Modbus TCP, EtherNet/IP, SMTP, HTTP		Supports all protocols at the same time	
<b>Modbus TCP</b>	Connection (Server)	32	16		
	Connection (Client)	32	16		
	RTU-EN01 Connection	4	4		
<b>Socket</b>	TCP Connection	4	2		
	UDP Connection	4	2		
<b>SMTP</b>	E-mail Connection	4	2		
Operation Mode		Scanner/Adapter			
<b>EtherNet/IP</b>	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)	5ms ~ 1,000ms		Default: 20ms
		Max. Performance	3,000pps		
		Max. Capacity per Connection	500bytes		
	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 ~ 1000 ms			
AS00SCM (RTU) + AS-FEN02 Connection Nodes		15	8	AS RTU Mode	

Please visit Delta's official website for selection



Item		AS500 Series	AX-3 Series	Note	
<b>Protocol</b>		Modbus TCP, EtherNet/IP, Socket	Modbus TCP, EtherNet/IP, Socket, OPC-UA	Supports all protocols at the same time	
<b>Modbus TCP</b>	Connection (Server)	16	32		
	Connection (Client)				
<b>Socket</b>	TCP Connection	8			
	UDP Connection				
<b>EtherNet/IP</b>	Operation Mode		Adapter	Scanner/Adapter	
	CIP_IO Connection	CIP Connection	8	Input = 64; Output = 64	Shared with all servers
		TCP Connection	16	8	Shared with all servers
		Requested Packet Interval (RPI)	5 ms ~ 1,000 ms	20 ms ~ 1,000 ms	Default: 20 ms
		Max. Performance	3,000 pps	3,000 pps	
	Max. Capacity per Connection		500 bytes		
	CIP_Explicit Message	Class 3 (Connected Type)	8	8	Shared with all servers
UCMM (Non-Connected Type)		16	8	Shared with all servers	
Supported CIP Objects		Identity, Message Router, Assembly, Connection Manager, Port, TCP/IP interface, Ethernet link, Vendor specific			

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Item		AS500 Series	AX-3 Series
<b>OPC UA (Server)</b>	Default TCP Port		TCP: 4840 (configurable)
	CMax Sessions (Client)		5
	Max. Monitored Items		1,000
	Sampling Rate (ms)		100/300/500/1,000/2,500/5,000
	Max. Subscriptions		100
	Max. Published Variables		10,000
	Max. Value Attributes		10,000
	Max. Published Structure Definitions		100

# Ordering Information

## ■ CPUs

Name	Model	Instruction Speed/Performance	Memory / CPU Clock	Max. Inputs & Outputs/Extension Module (Max. Extension Racks)	Memory Card	Certification
CPU	AS200 AS300	LD: 25 ns MOV: 0.15 μs 40k steps/1ms (LD 40%, MOV 60%)	RAM: 2 MB ROM: 4 MB CPU clock: 400 MHz	Right-side + remote expansion: 1,024 pts/32 modules (Max. 15 racks)	Micro SD Max. 32 GB	CE/UL
	AS500 <b>New</b>	Boolean: 0.05 μs Integer: 0.24 μs Float: 0.30 μs	RAM: 20 MB ROM: 20 MB CPU clock: 1 GHz	Right-side expansion: 1,024 pts/32 modules		
	AX-3 <b>New</b>	Boolean: 5 ns Integer: 5 ns Float: 33 ns	RAM: 4 GB ROM: 128 MB CPU clock: 800 MHz	Right-side expansion: 1,024 pts/32 modules		

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	16 DI/16 DO	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		12 DI/12 DO	Diff./NPN		2 CHs, 4 MHz (Diff.) 4 CHs, 200 kHz	2 Axes, 4 MHz (Diff.) 4 Axes, 200 kHz		
	AS320T-B		8 DI/12 DO	NPN	EU	4 CHs, 200 kHz	6 Axes, 200 kHz (12 CHs, 200 kHz)		
	AS320P-B			PNP					
	AS300N-A	-	-	-	-	-			
	AS228T-A	64k steps	16 DI/12 DO	NPN	EU	4 CHs, 200 kHz	6 Axes, 200 kHz (12 CHs, 200 kHz)	USB RS-485*2 Ethernet CANopen	
	AS228P-A			PNP					
	AS228R-A			Relay					
	AS218TX-A		8 DI/6 DO 2 AI/2 AO <sup>(*)</sup>	NPN			3 Axes, 200 kHz (6 CHs, 200 kHz)		
AS218PX-A	PNP								
AS218RX-A	Relay								
Motion CPU	<b>New</b> AS516E-B <sup>(*)</sup> (EtherCAT, 16 axes)	20MB	16 DI/8 DO	NPN	EU	-	-	USB RS-232 RS-485 Ethernet CANopen EtherCAT USB RS-232 RS-485 Ethernet*2 CANopen CAN Motion USB RS-232 RS-485 Ethernet EtherCAT	-
	<b>New</b> AS524C-B <sup>(*)</sup> (CANopen, 24 axes)								
	<b>New</b> AX-308E <sup>(*)</sup> (EtherCAT, 8 axes)	8MB							

Note:  
\*1: The specifications of the built-in AIO are the same as AS-F2AD/AS-F2DA function cards  
\*2: Please contact our distributors for release date

## ■ 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 modules, 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 built-in CANopen communication modules
CANopen Builder [V5]	Free	CANopen configuration software/motion control programming software	AS Series / AH Series / DVP Series built-in Ethernet 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 Modules

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