AH500 series - High performance PLC system

The new generation AH Series PLC provides automation solutions for high-level applications. The combination of modular hardware structure, advanced functions and highly integrated software provides system solutions for advanced process control. In addition to various function blocks, excellent price/performance ratio and an abundant selection of extension modules, the AH PLC also provides exceptional system expansion ability, greatly reducing system cost for a broad range of applications.

- LD/SFC/FBD/IL/ST languages
- Utilizes a dual-core multi-tasking processor
- Reliable operations of the supported modules in severe conditions
- Enhanced flexibility: Max. 100 meters between 2 local extension racks
- Hot-swapping function keeps system running for improved maintainability
- CPU built-in with fully isolated RS-232/422/485, Mini-USB, Ethernet, SD Card 1.0
- Highly integrated software ISPSoft: graphical interface with 5 programming languages IEC61131-3
- Maxl. I/O points:　　　　DIO: Max.　　4.352 points
　　　　　　　　　　　　　AIO: Max.　　544 channels
　　　　　　　　　　　　　RIO: Max.　　125.440 digital points / 3.920 analog channels
- Program capacity:　　　　Max.　　256K steps / Data register 64K words
- Excellent program execution speed:　　0.3ms / 1k steps

CPU modules — *internal power consumption (2W)*

type	local I/O (points)	program capacity (steps)	data register (K words)			function blocks	extension backplane
			D	L	B		

AHCPU500-RS2

RS2 series CPU modules

- Built-in RS-232/422/485 multi-modes communication port x 2
- Built-in SD card slot, Mini-USB programming port
- Program execution speed: LD instruction @ 0.02μs / 1K steps @ 0.3ms
- MODBUS RTU/ASCII
- 2048 timers and counters
- No battery required RTC function *(max. 30 days after power off)*

type	local I/O	program capacity	D	L	B	function blocks	extension backplane
AHCPU500-RS2	768	32k	16	16	512	128	0
AHCPU511-RS2	1280	96k	48	48	1024	1024	1

EN series CPU modules *(with built-in EtherNet communication port 100Mbps)*

As RS2 above, but with one less comm. port:
- WEB/E-mail/IP Filter function
- Built-in Ethernet communication port
- NTP network time correction function

type	local I/O	program capacity	D	L	B	function blocks	extension backplane
AHCPU510-EN	1280	64k	32	32	1024	256	1
AHCPU511-EN	1280	96k	48	48	1024	1024	1
AHCPU521-EN	2304	192k	96	96	2048	2048	3
AHCPU531-EN	4352	384k	128	128	4096	4096	7

AHCPU521-EN

Main backplanes — *internal power consumption (0.01W)*

- Built-in communication port for extension backplanes
- Slot spaces are not occupied by Power/CPU/RTU modules
- Supports CPU modules, remote I/O communication modules (RTU)

type	slots	description
AHBP04M1-5A	4	main backplane suppports CPU, remote I/O modules
AHBP06M1-5A	6	main backplane suppports CPU, remote I/O modules
AHBP08M1-5A	8	main backplane suppports CPU, remote I/O modules
AHBP12M1-5A	12	main backplane suppports CPU, remote I/O modules

AHBP06M1-5A

Extension backplanes — *internal power consumption (1.41W)*

- For main backplane extension
- Built-in communication port for backplanes

type	slots	description
AHBP06E1-5A*	6	ext. backplane suppports CPU, remote I/O modules
AHBP08E1-5A*	8	ext. backplane suppports CPU, remote I/O modules

Power supply modules — *internal power consumption (1.41W)*

- Power supply for the modules on the racks

type	power	supply		description
AHPS05-5A	60W	100 - 240 VAC	50/60Hz	power supply module
AHPS15-5A	36W	24 VDC		power supply module

* For extension backplane cables, see C-13

AHPS05-5A

Automation

AH500 series - Digital I/O modules

supports hot-swapping function

type	points		signals	terminal type	description
	In	Out			

Input modules

- PNP/NPN mixed mode design
- Individual LED status indicator

AH16AM10N-5A	16	–	24 VDC 5mA	JIS removable	digital input module
AH16AM30N-5A	16	–	120 - 240 VAC	JIS removable	digital input module
AH16AR10N-5A	16	–	24 VDC 5mA	JIS removable	interruption card
AH32AM10N-5C*	32	–	24 VDC 5mA	MIL terminal	digital input module
AH64AM10N-5C*	64	–	24 VDC 3.2mA	MIL terminal	digital input module

Output modules

- Supports keep-last-value function when CPU shuts down
- Individual LED status indicator

AH16AN01R-5A	–	16	Relay 2A	JIS removable	digital output module
AH16AN01T-5A	–	16	NPN *(Sink)*	JIS removable	digital output module
AH16AN01P-5A	–	16	PNP *(Source)*	JIS removable	digital output module
AH16AN01S-5A	–	16	TRIAC	JIS removable	digital output module
AH32AN02T-5C*	–	32	NPN *(Sink)*	MIL terminal	digital output module
AH32AN02P-5C*	–	32	PNP *(Source)*	MIL terminal	digital output module
AH64AN02T-5C*	–	64	NPN *(Sink)*	MIL terminal	digital output module
AH64AN02P-5C*	–	64	PNP *(Source)*	MIL terminal	digital output module

Mixed Input/Output

- PNP/NPN mixed mode design
- Individual LED status indicator
- Supports keep-last-value function when CPU shuts down

AH16AP11R-5A	8	8	Relay 2A	JIS removable	digital I/O module
AH16AP11T-5A	8	8	NPN *(Sink)*	JIS removable	digital I/O module
AH16AP11P-5A	8	8	PNP *(Source)*	JIS removable	digital I/O module

* *Pin head termination. For other cable types and lengths, see C-14*

Analog I/O modules

supports hot-swapping function

- Conversion time: 150 µs/channel
- Isolated signal design
- Diagnose function
- Supports interrupt function
- Module status LED display

Analog input modules

Hardware resolution: 16-bit

- Accuracy (at 25°C) Voltage mode: ±0.02% *(full scale)*
  Current mode: ±0.05% *(full scale)*

AH04AD-5A	4	–	0/1-5V, 0-10V, 0/4-20mA	JIS removable	analog input module
AH08AD-5B	8	–	0/1-5V, 0-10V	JIS removable	analog input module
AH08AD-5C	8	–	0/4-20mA	JIS removable	analog input module

Analog Output modules

Hardware resolution: 16-bit

- Supports keep-last-value function when CPU shuts down
- Accuracy (at 25°C) Voltage mode: ±0.05% *(full scale)*
  Current mode: ±0.1% *(full scale)*

AH04DA-5A	–	4	0/1-5V, 0-10V, 0/4-20mA	JIS removable	analog output module
AH08DA-5B	–	8	0/1-5V, 0-10V	JIS removable	analog output module
AH08DA-5C	–	8	0/4-20mA	JIS removable	analog output module

Mixed Analog Input/Output

Hardware resolution: 16-bit

AH06XA-5A	4	2	0/1-5V, 0-10V, 0/4-20mA	JIS removable	analog I/O module

Temperature measurement modules

Hardware resolution: 20-bit

- Accuracy: ±0.06% *(full scale)*
- Signal isolated design
- Diagnose function
- PID function
- Module status LED display
- Supports disconnection detect function

2/3/4-wire RTD input

AH04PT-5A	4	–	PT100/1000, Ni100/1000, 0-300Ω	JIS removable	temperature module

Thermocouple

AH04TC-5A	4	–	J,K,R,S,T,E,N	JIS removable	temperature module
AH08TC-5A	8	–	J,K,R,S,T,E,N	JIS removable	temperature module

AH16AM30N-5A

AH32AN02T-5C

AH16AP11R-5A

AH04PT-5A

AH500 accessories

type	signals	terminal type	description

Network modules

- Diagnose function
- Module status LED indicator
- Supports hot-swapping function

AH10EN-5A — Ethernet — communication module *(Master/Slave)*
100Mbps comm. port x 2 / Etherlink , MODBUS TCP function / Automatic data exchange function / NTP network time correction function / SNMP/E-mail Filter function

AH10SCM-5A — Serial — communication module *(Master/Slave)*
Full isolation design / Built-in 2x RS422/485 / supports PLC Link function / MODBUS RTU/ASCII / Supports automatic data exchange function

AH10DNET-5A — DeviceNet — communication module *(Master/Slave)*
Supports max. speed of 1 Mbps / Switchable between master and slave / connects up to 63 slaves in master mode / RIO capacity in master mode: 490 words IN/OUT

AH10PFBM-5A — Profibus DP — communication module *(Master)*
AH10PFBS-5A — Profibus DP — communication module *(Slave)*

Remote I/O RTU modules

- Diagnose function
- Supports max. speed of 1Mbps
- Module status LED indicator

AHRTU-PFBS-5A — Profibus DP — remote Input/Output module
AHRTU-DNET-5A — DeviceNet — remote Input/Output module

Motion control modules

High speed counters

- Diagnose function
- UD/PD/AB/4AB modes
- Supports interrupt function
- Module status LED indicator

AH02HC-5A — HDC terminal — 2 high speed counter channels (200K Hz) input
AH04HC-5A — HDC terminal — 4 high speed counter channels (200K Hz) input

Pulse train motion control modules

- Supports G-Code
- Diagnose function
- Supports Micro SD card
- Module status LED indicator
- Supports hot-swapping function
- Built-in Ethernet communication port
- Built-in Mini USB programming communication port

AH10PM-5A — HDC terminal — 6-axis pulse train motion control module
AH20MC-5A — HDC terminal — 12-axis DMCNET communication motion control

Cables for AH500 PLC

type	std. length	for which modules

Cables for extending main to extension backplane

AHACAB06-5A	0.6 met	AHBP06E1-5A / AHBP08E1-5A
AHACAB10-5A	1.0 met	AHBP06E1-5A / AHBP08E1-5A
AHACAB15-5A	1.5 met	AHBP06E1-5A / AHBP08E1-5A
AHACAB30-5A	3.0 met	AHBP06E1-5A / AHBP08E1-5A

Accessories

AHASP01-5A	space module to protect empty backplane slots
AHADINADP1-5A	DIN rail adaptor for rack installation
FMC-SD1G	SD memory card capacity 1GB
HASP-20-OPC01	Delta OPC server for AH500 series

AH10EN-5A

AHRTU-DNET-5A

AHACAB06-5A

AHASP01-5A