A-Series I/O

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Overview

A-Series I/O modules are a family of compact and networkable data acquisition and control modules, with a wide range of available analog and digital input/output signal types. All modules are designed for reliable operation in harsh environments and are equipped with isolation and failure protection, and high resistance against noise-interference. The "robust" serial modules *(Models ASIO-41xx)* can operate in temperatures from -40 to 85°C.

Ethernet modules are available for ModbusTCP *(Models AEIO-60xx)* and EthernetIP *(Models AEIO-61xxEI)* protocols. Dual Ethernet port modules *(Models AEIO-62xx, AEIO-61xxEI)* can be easily daisy-chained without the need for ethernet switches.

The Serial modules *(Models ASIO-4xxx)* use the ModbusRTU protocol via RS-485, the industry's most widely used bi-directional, balanced transmission line standard.

All modules include these standard features

- Mounting Options - DIN-rail *(side-by-side or piggy-back)* or panel/wall mount
- Removable screw terminals for signal wires to replace module without re-wiring
- Wide input power ranges *(eg: 10-30VDC)*
- Low power consumption
- LED's for ease in troubleshooting wiring and communication network
- Watchdog timer supervisory function automatically resets modules in the event of system failure

All A-Series modules can be used with any SoftPLC Controllers

A-Series Specifications

Individual module specifications are on each product's datasheet. All A-Series modules conform to the general specifications below:

	ASIO-40xx RS-485	ASIO-41xx RS-485 Robust	AEIO-60xx ModbusTCP	AEIO-61xx Ethernet/IP	AEIO-62xx ModbusTCP Dual-Port
Module Dimensions	110 x 60 x 27 mm (HxWxD)				
Power Input	10-30 VDC (24VDC standard)				
Operating Temperature	32°F~158°F (0°C~70°C)	-40°F~185°F (-40°C~85°C)	14~158°F (-10~70°C)		
Storage Temperature	-40 ~ 185°F (-40°C~85°C)			-4 ~ 176°F (-20°C~80°C)	
Relative Humidity	0%~95%, non-condensing			20%~95%, non-condensing	
Comm Network Connection	Plug-in screw terminal block		(1) RJ-45 (LAN)	(2) RJ-45 (LAN)	
I/O and Power Connections	(2) Plug-in screw terminal blocks, #14 ~ 22 AWG				
Construction Material	Impact resistant ABS plastic				
Certifications & Compliances	CE, FCC rated, ROHS Compliant Most modules UL, UL-C rated				

A-Series RS-485 Serial Modules

The available serial RS-485 A-Series modules are listed below. Detailed specifications can be found in the datasheets linked to the module Catalog Number in the table. These modules interface to SoftPLC PAC's using its Modbus Master serial driver or the COMGENIUS TLM.

Modules with Catalog Numbers ASIO-41xx are "robust" for operation in extended temperatures -40°F~185°F (-40°C~85°C).

Type	# Points	Current/Point	Cat #
Analog Input / Thermocouple	8	+/-20 mA, 4~20 mA Type J, K, T, E, R, S, B +/-(15mV,50mV,100V,500mV,1V,2.5V)	ASIO-4118
RTD	6	Pt 100/1000, Ni Balco500 2 or 3-wire	ASIO-4015
Analog Input	8	0~150mV, 0~500mV, 0~1V, 0~5V, 0~10V, 0~15V +/-(150mV, 500mV, 1V, 5V, 10V, 15V) 0~20mA, 4~20mA, +/-20mA	ASIO-4117
Analog Output	4	0~20mA, 4~20mA, +/-10V	ASIO-4024
Digital I/O	7/8	(7) Inputs: 10~48 VDC (8) Outputs: 40V, 1A max	ASIO-4150
Digital Input	16	50V max	ASIO-4051
Digital I/O	8/8	(8) Inputs: 10~30 VDC (8) Outputs: 200mA max load	ASIO-4055
Digital Output	12	10~35 VDC, 200mA max load Sourcing	ASIO-4056SO
Relay Output	8	Form A 0.5A @ 120 VAC, 0.25A @ 240 VAC, 1A @ 30 VDC, 0.3A @ 110 VDC	ASIO-4168
Power Relay	8	(4) Form A/(4) Form C 5A @ 250 VAC, 5A @ 30 VDC	ASIO-4069

Ethernet A-Series Modules

The available Ethernet capable A-Series modules are listed below. Detailed specifications are in the datasheets linked in the right-most column of the tables.

- Dual-Port Ethernet ModbusTCP Modules
- Ethernet ModbusTCP Modules
- Ethernet/IP Modules

DUAL-PORT MODBUS/TCP MODULES

Type	# Points	Current/Point	Cat#
Digital Input	16	10~30 VDC, 3kHz counters	AEIO-6251
Digital In/Out	8 In / 7 Out	Inputs: 10~30 VDC, 3kHz counters Outputs: 10~30 VDC Sink, 100mA/pt max	AEIO-6250
Digital In/Power Relay	4 In / 4 Out	Inputs: 10~30 VDC, 3kHz counters Outputs: 4 Form C, 250VAC@5A, 30VDC@5A	AEIO-6266
Digital Output	16	10~30 VDC Sink, 100mA/pt max	AEIO-6256
Power Relay	6	(5) Form C / (1) Form A 250VAC@5A, 30VDC@5A	AEIO-6260
Analog Input	8	+/-(150mV,500mV,1V,5V,10V) 0-20mA, 4-20mA, +/-20mA	AEIO-6217
Analog Output	4 AI / 4 DI	0-5,0-10,-10,/-5,/-10V 0-20, 4-20mA; 4 Dry Contact Inputs	AEIO-6224

MODBUS/TCP MODULES

Type	# Points	Current/Point	Cat #
Digital In/Out	12/6	Inputs: 10~30 VDC Outputs: 10~30 VDC Sink, 100mA/pt max	AEIO-6050
Digital In/Ctr/Out	12/2/2	Inputs: 10~30 VDC Counters: 3kHz Outputs: 10~35 VDC Sink, 1A/pt max, 5kHz pulse	AEIO-6051
Digital In/Out	8/8	Inputs: 10~30 VDC, 3kHz counters Outputs: 10~30 VDC Source, 100mA/pt max	AEIO-6052
Digital In/Relay	6/6	Inputs: 10~30 VDC, 3kHz counters Outputs: Form A 120VAC@0.5A, 30VDC@1A; 5kHz pulse	AEIO-6060

Type	# Points	Current/Point	Cat #
Digital In/Power Relay	6/6	Inputs: 10~30 VDC, 3kHz counters Outputs: Form C 250VAC@5A, 30VDC@3A	AEIO-6066
RTD	7	Pt 100/1000, Ni 50, 508, Balco	AEIO-6015
Analog Input	8	+/-(150mV,500mV,1V,5V,10V) 0-20mA, 4-20mA, +/-20mA	AEIO-6017
Thermocouple	8	Type J, K, T, E, R, S, B Outputs: 10~30VDC, 100mA maX	AEIO-6018+
Universal	12	6 AI, 2 AO, 2 DI, 2 DO	AEIO-6024

ETHERNET/IP MODULES

Type	# Points	Current/Point	Cat #
Digital Input	16	10~30 VDC	AEIO-6151EI
Digital In/Out	8 In / 7 Out	Inputs: 10~30 VDC Outputs: 8~35VDC, 100mA max	AEIO-6150EI
Digital Output	16	8~35VDC, 100mA max	AEIO-6156EI
Power Relay	6	(5) Form C / (1) Form A 250VAC@5A, 30VDC@5A	AEIO-6160EI
Analog Input	8	+/-(150mV,500mV,1V,5V,10V) 0-20mA, 4-20mA, +/-20mA	AEIO-6117EI

Resources

Links to individual module's data sheets are in the Modules sections - Ethernet and Serial. The links below are general specification documents and manuals for the drivers used to connect SoftPLC controllers to A-Series I/O:

A-Series Module Dimensions/Mounting

Mounting dimensions and options for A-Series I/O and communication modules.

ModbusTCP Master Driver Manual for SoftPLC

SoftPLC's ModbusTCP Master Driver can be used with A-Series modules I/O that support ModbusTCP *(Models AEIO-60xx, AEIO-62xx)*.

Ethernet/IP Driver Manual for SoftPLC

SoftPLC's Ethernet/IP driver can be used with A-Series modules I/O that support Ethernet/IP *(Models AEIO-61xxEI)*.

Modbus Serial Master Driver Manual for SoftPLC

SoftPLC's Modbus Serial Master Driver can be used with A-Series modules I/O that support ModbusRTU *(Models ASIO-4xxx)*. The COMGENIUS loadable instructions can be also used for simple Modbus Master requirements.

SoftPLC A-Series Driver Manual

SoftPLC drivers for serial RS-485 non-Modbus compatible A-Series modules *(Models ASIO-4xxx)*.