

QnAS & AnS PLC

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Power Supply Modules

A1S61PN, A1S62PN, A1S63P Power Supplies				
A1S61PN, A1S62PN, A1S63P Specifications				
Item	Input voltage		Rated output	
A1S61PN	AC 100-240V		DC 5V, 5A	
A1S62PN	AC 100-240V		DC 5V, 3A and DC 24V, 0.6A	
A1S63P	DC 24V		DC 5V, 5A	
A1S32B, A1S33B, A1S35B, A1S38B, A1S38HB (EU) specifications				
Item	A1S32B	A1S33B	A1S35B	A1S38B/A1S38HB (EU)
Maximum number of I/O modules	2	3	5	8
Installation hole size	6mm (0.24 inch) dia. per shaped hole (for M5 screw)			

Input Modules

AC input modules

There are input modules for use with AC 110V, 220V and 24V. All are available with terminal block connection.

DC input modules

Both sink and source DC input modules are available in differing input point densities. There are also DC input modules with high response speeds.

Output Modules

High density modules

The output modules are available in 16, 32 and 64 input point densities. All of them are single slot size.

Relay contact output modules

The relay contact output modules available can be used for switching loads of DC 24V or AC 240V. An independent common relay output module is also available.

Triac/SSR output modules

The triac/SSR output modules are fast response modules which have a rated switching voltage of AC 100V-240V. An independent common module is also available with a maximum switching current of 1A.

Transistor output modules

The transistor output modules are available for either sink or source type output devices and can switch 12VDC and/or 24VDC. Different current ratings for the transistor outputs are also available, up to a maximum switching current of 2A.

TTL, CMOS output module

The TTL, CMOS output module can be used to directly drive TTL or CMOS ICs. The operating voltage is between DC 4.5V and 15V.

Combination input/output modules										
Part No.	Input type	No. of Input points	Input voltage (V)	Input current (mA)	Output type	No. of O/P points	Load voltage (V)	Load current (A)	Points/ common	5VDC current consumption (mA)
A1SH42	DC sink	32	12/24	2/5	Transistor sink	32	DC 12/24	0.1	32	500
A1SH42-S1		32	24	5		32	DC 12/24	0.1	32	500
A1SX48Y18		8	24	7	Relay	8	AC 240 DC 24	2	8	85
A1SX48Y58		8	24	7	Transistor sink	8	DC 12/24	0.5	8	60
A1SJ-56DT		32	24	7		24	DC 24	0.5	8	220
A1SJ-56DR		32	24	7	Relay	24	AC 240 DC 24	2	8	220

Extension Base Units and Extension Cables

A1S52B-S1, A1S55B-S1, A1S58B-S1, A1S65B-S1, A1S68B-S1 Specifications

Item	A1S52B-S1	A1S55B-S1	A1S58B-S1	A1S65B-S1	A1S68B-S1
Maximum number of I/O modules	2	5	8	5	8
Power supply used	No	No	No	Yes	Yes
Installation hole size	6 mm (0.24 inch) dia. per shaped hole (for M5 screw)				
External dimensions mm (inch)	135x130 (5.31x5.12)	260x130 (10.24x5.12)	365x130 (14.37x5.12)	315x130 (12.4x5.12)	420x130 (16.54x5.12)

A1SC03B, A1SC07B, A1SC12B, A1SC30B, A1SC60B, A1SC05NB, A1SC07NB specifications	
Item	Cable length m (ft)
A1SC01B	0.055 (0.18)
A1SC03B	0.33 (1.08)
A1SC07B	0.7 (2.30)
A1SC12B	1.2 (3.94)
A1SC30B	3 (9.84)
A1SC60B	6.0 (19.69)
A1SC05NB	0.45 (1.5)
A1SC07NB	0.7 (2.30)

Analog Modules

A1S64AD FOUR CHANNEL ANALOG INPUT MODULE

The A1S64AD analog input module can accept either current or voltage input signals. These signals are then converted into a 16 bit () binary value as a sequence control resource. Input signals can be instantly read, or they can be sampled for user programmable time/count average processing.

Other features of this module include:

- ❖ Offset/gain setting switch
- ❖ Select sampling function or average function
- ❖ Permit or forbid A/D conversion by channel

A1S68AD EIGHT CHANNEL ANALOG INPUT MODULE

The A1S68AD analog input module, which can also accept either current or voltage input signals, has a total of 8 input channels. Each channel can be set individually by means of dip switches located inside the cover to accommodate various input types and ranges.

Other features of this module include:

- ❖ Read data from 8 channels at once with the FROM command
- ❖ Select sampling function or average function
- ❖ Permit or forbid A/D conversion by channel

A1S62DA TWO CHANNEL ANALOG OUTPUT MODULE

The A1S62DA analog output module, like the analog input modules, has a built-in microprocessor, which converts binary digital values to either current or voltage analog output signals.

Other features of this module include:

- ❖ Offset/gain setting switch
- ❖ Write 2 channels output with the TO command
- ❖ Permit or forbid D/A conversion by channel

A1S68DAV, A1S68DAI EIGHT CHANNEL ANALOG OUTPUT MODULES

The A1S68DAV and A1S68DAI are analog output modules that have 8 output channels for either voltage (A1S68DAV) or current (A1S68DAI).

Other features of these modules include:

- ❖ High speed conversion rate
- ❖ Permit or forbid D/A conversion by channel

Select to hold or clear the last output value when CPU operation is suspended

A1SD63ADA, A1S66ADA COMBINED ANALOG INPUT/OUTPUT MODULE

The A1S63ADA combined analog input/output module performs analog to digital and digital to analog conversions. Input and output signals can either be current or voltage.

Other features of this module include:

- ❖ Selectable resolution and conversion speed
- ❖ Loop control function

The A1S66ADA module has been added to the series for analog input and output. This module has 4 channel input and 2 channel output, and has the fastest conversion speed in the series.

- ❖ 12 bit resolution for input and output
- ❖ 80µs/channel sampling rate

A1S62RD3, A1S62RD4 TEMPERATURE SENSOR INPUT MODULE

The A1S62RD3/4 temperature sensor input module obtains temperature data through a direct connection to temperature sensing devices. The data is converted to a digital value by A1S62RD3/4 and then added to the sequence program.

Other features of these modules are:

- ❖ 2 input channels
- ❖ Pt100 sensor compatible JIS • DIN type (JIS C1604-1989, DIN43760-1980 compatibility)
- ❖ Wire breakage detection
- ❖ High resolution of 0.025°C per span

A1S68TD EIGHT CHANNEL THERMOCOUPLE INPUT MODULE

The A1S68TD is an 8 channel thermocouple input module which is compatible with most types of thermocouple. The QnAS/AnSCPU system with A1S68TD meets requirements of process control applications with further advantages offered by QnAS/AnS.

- ❖ Insulated input
- ❖ Cold junction compensation
- ❖ Compatible thermocouple
- ❖ Flexible configuration

A1S64TCTT-S1, A1S64TCTTBW-S1

A1S64TCRT-S1, A1S64TCRTBW-S1

A1S62TCTT-S2, A1S62TCTTBW-S2

A1S62TCRT-S2, A1S62TCRTBW-S2

TEMPERATURE CONTROL MODULES

The A1S64TC Series modules are temperature controllers that operate with any QnAS/AnS Series CPU. The modules have temperature measurement input and maneuvering output with built-in PID algorithm, allowing temperature control in a variety of applications.

- ❖ Either thermocouple or Pt100 3-wire temperature sensor
- ❖ Auto tuning function
- ❖ S1: Either heating (positive) or cooling (negative) control S2: Both heating (positive) and cooling (negative) control
- ❖ Temperature control can be continued in case of CPU failure
- ❖ Wire breakage detection option available

Analog Timer Module

A1ST60 ANALOG TIMER MODULE

The A1ST60 is an analog timer module with 8 analog timers. Each of the timers can be set between 0.1 and 600 seconds with an accuracy of $\pm 2\%$. The timers are set by the variable rotary dials on the front of the module and can be easily adjusted using a small screwdriver.

Positioning Modules

A1SD75P1-S3, A1SD75P2-S3, A1SD75P3-S3 POSITIONING MODULES

The A1SD75 Series of modules represents the combination of Mitsubishi's technological expertise in the manufacture and design of CNC, Inverter, Servo and PLC systems. These modules provide a plethora of functions which satisfy the requirements of even the most demanding of positioning applications.

- ❖ Up to 3 axes operation
- ❖ Increased positioning data memory
- ❖ S-curve acceleration/deceleration
- ❖ Interpolation
- ❖ Variety of original point return method
- ❖ Parameter setting with Windows software
- ❖ Open-collector or differential driver (A1SD75P)
- ❖ AD75TU teaching unit
- ❖ Extensive functions
- ❖ A1SD75M SSC Net compatible controller

A1SD70 POSITIONING MODULE (VOLTAGE OUTPUT)

The A1SD70 is a voltage output, single axis positioning module. It can be used in conjunction with a servo motor for closed loop precision positioning applications. High positioning speeds up to 400k pps are attainable over a total 32 bit signed binary positioning range. The positioning control unit can be set in accordance with the application, i.e. pulses, mm, inches, and degrees.

A1SD71-S2 POSITIONING MODULE (PULSE OUTPUT)

The A1SD71-S2 is a pulse train output type positioning module with linear interpolation. It is suitable for use with both pulse and servo motors. High positioning speeds of up to 200k pps are attainable over a positioning range of 1 to 16,252,928 pulses. The positioning control unit can be set in accordance with the application i.e. pulses, mm, inches, and degrees. Compensation functions are also available for improving positioning accuracy.

High Speed Counter Modules

A1SD61 HIGH SPEED COUNTER MODULE

The A1SD61 high speed counter module is designed to accept input pulses at frequencies up to 50 kHz. Input pulses with a rise and fall time of as little as 500 µsec can be counted. The module has a 32 bit signed binary count range and the counter can be preset or disabled by external signals as well as from the sequence program. Other features of this module include:

- ❖ High or low speed
- ❖ Single or bi-phase input
- ❖ 8 comparison result outputs
- ❖ Ring counter, limit switch, sampling functions

A1SD62, A1SD62E, A1SD62D, A1SD62D-S1 TWO CHANNEL HIGH SPEED COUNTER MODULES

A1SD62, A1SD62E, A1SD62D and A1SD62D-S1 are 2 channel high speed counter modules for QnAS/AnS series PLCs. These modules are an improvement on A1SD61 with a higher density of channels and counting speed for applications which require higher resolution and operating speed while providing an economic solution.

- ❖ A1SD62 & A1SD62E/100kpps, A1SD62D & A1SD62D-S1/200kpps input
- ❖ Two coincident output channels per input channel A1SD62/A1SD62D/A1SD62D-S1: Sink transistor output A1SD62E: Source transistor output
- ❖ 0 to 16,777,215 counting range
- ❖ Ring, Latch, Sampling & Periodic pulse counter functions, count disable function

Interrupt and Pulse Catch Modules

A1SI61 HIGH SPEED INTERRUPT MODULE

The A1SI61 high speed interrupt module has been designed for machine control applications which require rapid response times. When an interruption signal is provided, the A1SI61 temporarily stops the sequence program from running and executes an interruption program according to the interruption vector. The interrupt start condition may be selected by the use of internal switches according to the type of equipment connected, i.e. interrupt may be started on the leading or trailing edge of an interrupt signal.

A1SP60 PULSE CATCH MODULE

The A1SP60 is a 16 point DC 24V input module, which can be used as a normal input module or as a pulse catch module. The pulse catch function of this module allows short input pulses with a minimum pulse width of 0.5 msec to be used in the sequence program without losing any pulse signals. When a pulse signal is input, the condition is memorized and the module ensures that the sequence program is executed using the memorized condition for at least one scan. Inputs are set up in blocks of 4, and each block can be set to a normal operating function or the pulse catch function.

Intelligent Communication Module

A1SD51S INTELLIGENT COMMUNICATION MODULE

The A1SD51S intelligent communication module for the AnS Series PLCs allows on-line and off-line programming when AD51H-BASIC is used with a general-purpose console or personal computer, and up to two multi-task processes can also be executed at high speed. Other features of this module include:

- ❖ Two RS-232C ports and one RS-422/485 port are provided
- ❖ EEPROM program storage

QnAS Series Communication Modules

A1SJ71QC24 (-R2), A1SJ71QC24N(-R2) / A1SJ71UC24-R2, A1SJ71UC24-PRF A1SJ71UC24-R4 SERIAL COMMUNICATION MODULES

Features

- ❖ A total of two channels of RS232C, RS422 and RS422/485 communication interface ports
- ❖ Both ports can operate as linked or independently
- ❖ Choice of Dedicated protocol mode, Non-protocol mode, or Bi-directional protocol mode
- ❖ Entire QnA device memory area and program area can be accessed with the dedicated protocol mode
- ❖ User definable frame is automatically added to transmission data
- ❖ Up to 115.2k bps of high speed transmission
- ❖ ASCII/Binary code selection
- ❖ Independent/Link operation

QnAS Series Ethernet Modules

A1SJ71QE71-B2, A1SJ71QE71-B5 / A1SJ71E71-B2-S3, A1SJ71E71-B5-S3 ETHERNET MODULES / ETHERNET INTERFACE MODULES

Features

- ❖ Operates on either 10BASE5 or 10BASE2
- ❖ TCP/IP, UDP/IP protocol support
- ❖ Selection of three communication modes
 - Fixed buffer communication
 - Random buffer communication
 - PLC server function
- ❖ UDP/IP broadcasting

- ❖ PING function
- ❖ Connection through routers

PROFIBUS Interface Modules

A1SJ71PB96F, A1SJ71PB92D PROFIBUS INTERFACE MODULES

The A1SJ71PB96F and A1SJ71PB92D modules have functions allowing an AnS PLC to connect to a Profibus system. The A1SJ71PB96F module is compatible with a Profibus-FMS network, and acts as a master node and either a client or a server node. The A1SJ71PB92D module is compatible with Profibus-DP network, and acts as a master to control Profibus-DP remote I/O nodes.

DEVICENET Interface Module

A1SJ71DN91 DEVICENET MASTER MODULE

The A1SJ71DN91 module allows connection to a DeviceNet system. This unit functions as a DeviceNet master and can control up to 63 slave stations over a distance of up to 500m.

- ❖ Selectable communication speed
- ❖ Recognized open network standard
- ❖ Wide range of DeviceNet compatible devices available

MODBUS Interface Modules

A1SJ71UC24-R2, A1SJ71UC24-R4 MODBUS INTERFACE MODULES

The A1SJ71UC24-R2 and A1SJ71UC24-R4 modules allow the AnS Series PLC to be connected to the MODBUS network. These modules under a MODBUS network system act as a slave station to write and read data to/from the AnS CPU memory in accordance with instructions given from a master system. In addition to the MODBUS protocol, these modules also support extended functions equivalent to the dedicated protocols of standard A1SJ71UC24 modules. This feature gives more flexibility of data acquisition and control by a master system.

- ❖ Support MODBUS slave station protocols
- ❖ Function code 1 to 21 are supported
- ❖ Two transmission modes of RTU or ASCII