MITSUBISHI ELECTRIC

Changes for the Better

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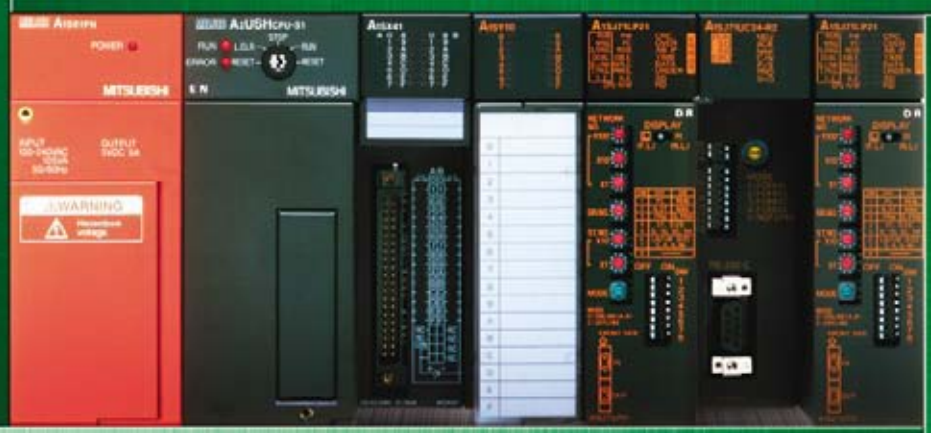
Mitsubishi Programmable Controllers

MELSEC-AnS/QnAS series



MELSEC-AnS/QnAS series

The Answer to Optimum Control - Anytime, Anywhere!



Choose a programmable controller. Choose quality. Choose MELSEC-AnS/QnAS!

Need reliability? Choose the MELSEC-AnS/QnAS Series!

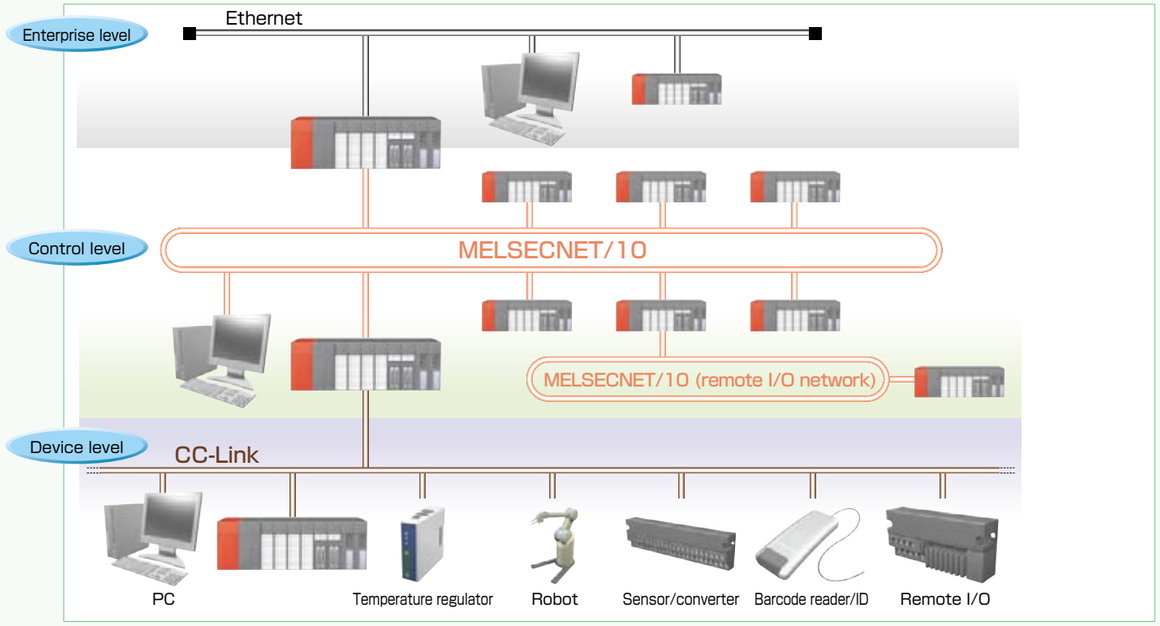
Need Mitsubishi's collective strength? Choose the MELSEC-AnS/QnAS Series!

Need global support? Choose the MELSEC-AnS/QnAS Series!

INDEX

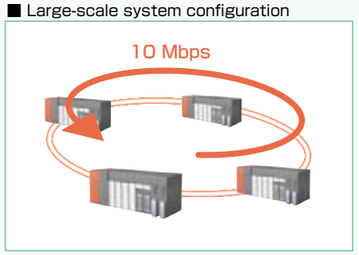
●Mitsubishi FA Network System

The Mitsubishi FA Network System provides optimum network products to meet specific application requirements. The network system includes an enterprise level network (Ethernet) used to gather information on production/quality control and the equipment operating status, a control level network (MELSECNET/10) used to link controllers, and a device level network (CC-Link) used to link a controller and other devices including sensors. This seamless network system allows easy information access beyond network levels.



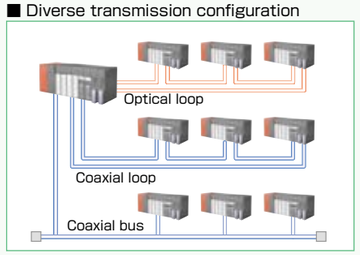
●MELSECNET/10

■ Large-scale system configuration



(1) High-speed communication
High-speed communication of 10 Mbps is possible using a dedicated data-link processor (MDP).
(2) No. of connectable stations
A maximum of 64 stations (optical/coaxial loop system)/32 stations (coaxial bus system) can be connected. The entire system can be expanded up to 255 networks (239 for QnAS Series).
(3) Large capacity
The maximum number of link points per network for link relay B, link register W, and link I/O is 8192, respectively. Hence, the network can support even large-scale systems with many I/O devices.

■ Diverse transmission configuration



To support a variety of systems flexibly, three transmission configurations are offered: an optical loop system which provides long distance between stations, long overall distance, and high noise immunity; a coaxial bus system which realizes low cost and easy cable assembly; and a coaxial loop system.

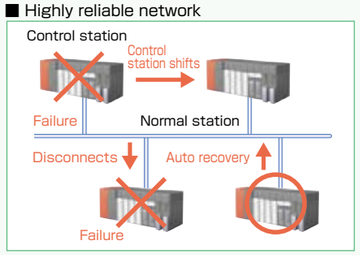
■ N:N communication

Access, such as remote monitoring and uploading/downloading programs from peripheral devices, PCs, etc., is capable in N:N communication. Furthermore, N:N communication can be performed by transmission/reception instructions (ZNRD, ZNWR) from the programmable controller program. In addition to this feature, the QnACPU can execute SEND, RECV, READ, WRITE, and REQ message transmission/reception instructions.

■ Gateway function

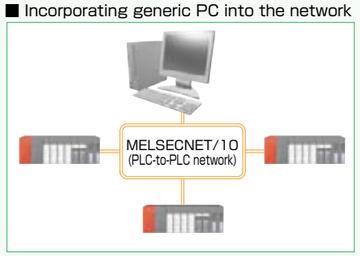
The gateway function to multiple networks via the QnACPU and AnUCPU enables interlink data transfer of link devices and a routing function that performs N:N communication with other networks.

■ Highly reliable network



Even if the control station fails, the normal station acts as a sub-control station to prevent interruptions in network communication.

■ Incorporating generic PC into the network



By installing MELSECNET/10 boards in generic PCs, the PCs can be connected to the MELSECNET/10 network system. This allows you to check data-link related testing and monitoring information on the PC screen and to access programmable controller data using user-programmed functions with the software.

●MELSECNET/10 Specifications

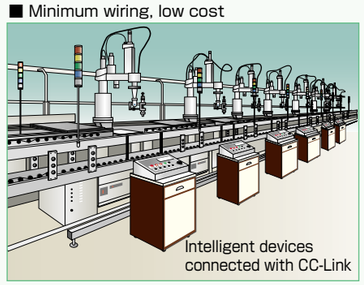
QnAS For QnASCPU
AnS For AnSCPU

Item \ Type				
	Control/ normal station	A1SJ71QLP21 QnAS A1SJ71LP21 AnS	A1SJ71QLR21 QnAS A1SJ71LR21 AnS	A1SJ71QBR11 QnAS A1SJ71BR11 AnS
	Remote I/O station	A1SJ72QLP25	A1SJ72QLR25	A1SJ72QBR15
Transmission path		Optical loop (SI/QSI cable)	Coaxial loop	Coaxial bus
Communication speed		10 Mbps/20 Mbps (multiplex transmission)		
Overall distance		30 km	19.2 km/30 km *1	300 m/500 m *1
Max. distance between stations		500 m/1 km*1	300 m/500 m*1	
Max. link points per network		X/Y: 8192 points, B: 8192 points, W: 8192 points		
No. of connectable stations per network		64 (PLC-to-PLC network)/65 (remote I/O network)		32 (PLC-to-PLC network)/ 33 (remote I/O network)

*1: Varies depending on the type of cable used.

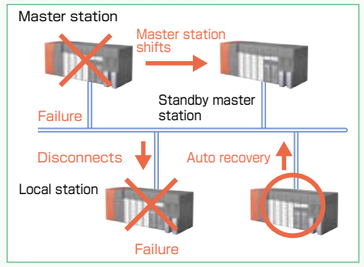
●CC-Link

■ Minimum wiring, low cost

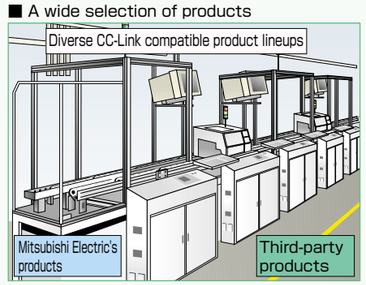


A bus type connection using dedicated CC-Link cables enables to connect multiple intelligent devices spread throughout the production line and to modify wiring easily. Hence, wiring and system maintenance costs are reduced.

■ Reliable and safe system



■ A wide selection of products

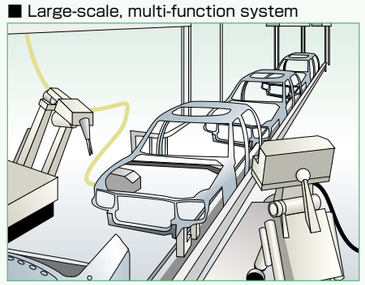


Optimal products can be selected from a wide variety of Mitsubishi Electric's products and third-party products for the CC-Link system.

Mitsubishi Electric performs compatibility tests to ensure that the third-party products can be connected without any problems.

Communication are continued between the master station and other local stations even if the local or remote station fails. In addition, repair and replacement can be done without stopping the system (when a 2-piece terminal block is used).

■ Large-scale, multi-function system



(1) High-speed communication
Communication with a transmission speed of 10 Mbps is possible.
(2) Long-distance communication
Maximum 1.2 km long-distance communication is supported. Furthermore, the distance can be extended up to 7.8 km using an optical repeater module.
(3) Large capacity
Communication of I/O data (2048 points) and numerical data (512 points) is capable. Hence, large-scale systems with many I/O devices can be supported.

●CC-Link Specifications

QnAS For QnASCPU
AnS For AnSCPU

Item		A1SJ61QBT11 QnAS	A1SJ61BT11 AnS
Transmission speed		Can select from 156 kbps, 625 kbps, 2.5 Mbps, 5 Mbps, and 10 Mbps	
Max. no. of connectable modules (master station)		64 (for remote I/O station with 1 occupied station)	
No. of occupied stations (local station)		1 to 4	
No. of link points	Per system	Remote I/O: 2048 points Remote register: 256 points (master station to remote/local station), 256 points (remote/local station to master station)	
	Per remote/ local station	Remote I/O: 32 points (local station: 30 points) Remote register: 4 points (master station to remote/local station), 4 points (remote/local station to master station)	
Transmission path		Bus (RS-485)	

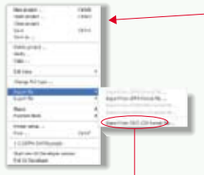
* The maximum overall cable length will differ depending on the transmission speed and connection cable. When a Ver.1.10 compatible cable is used, the relationship between transmission speed and the maximum overall cable length is shown in the table on the right.

Transmission speed	Station-to-station cable length	Maximum overall cable length
156 kbps	20 cm or longer	1200 m
625 kbps		900 m
2.5 Mbps		400 m
5 Mbps		160 m
10 Mbps		100 m

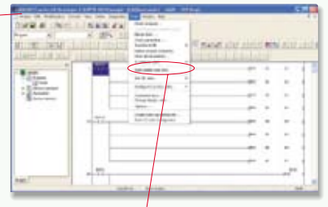
●Integrated FA Development and Debugging with MELSOFT

MELSOFT, Mitsubishi Electric's integrated FA software, dramatically improves operating efficiency for program development, debugging, and maintenance by taking advantage of Windows operability. More convenient and easy-to-use engineering environment is provided by the software such as GX Simulator that enables offline debugging without needing actual hardware and GX Configurator that allows initialization on the screen (without a program), monitoring, testing, etc.

●Improving Development Efficiency with GX Series



GX Developer
Programming software (Required)



GX Converter
Text/CSV format data converter

GX Simulator
Simulation software

GX Configurator
Data setting/monitoring software
for special function modules
(A Series dedicated product)

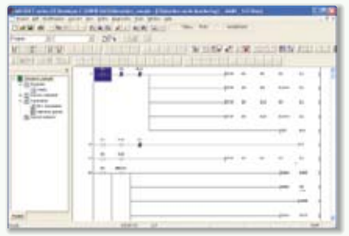
●Offline Debugging

GX Simulator runs a virtual programmable controller on the PC. Program debugging can be performed on the PC without needing actual hardware. By duplicating the operation of the actual programmable controller, debugging can be carried out upon completion of designing without having to wire I/O modules.

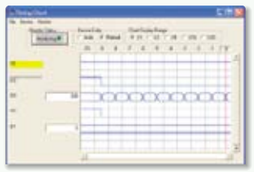
PC
(Virtual programmable controller)

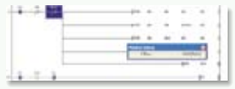
Program writing

Monitoring/ debugging



Timing chart
Variations of device values can be checked.

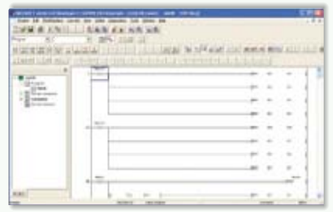




Monitor
Monitoring on the PC.

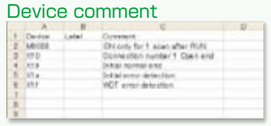
●Support Creation of System Documents

GX Converter converts other format data (text format data, CSV format data) to GX Developer format data (instruction list, device comment). Data conversion is simple using the data conversion wizard. This is a convenient tool for creation of system documents.



Files can be utilized on Excel.

Device comment



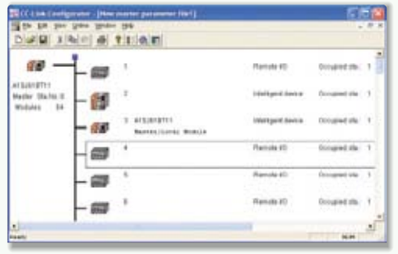
●Easy Parameter Settings

GX Configurator initializes parameters for special function modules simply by following the screen without sequence programs. Furthermore, monitoring and testing can be performed on the screen without having to consider the buffer memory. This is an effective tool for system adjustments and troubleshooting.

GX Configurator-AP: Positioning module setting/monitoring tool

Image menu screen

GX Configurator-CC: CC-Link module setting/monitoring tool



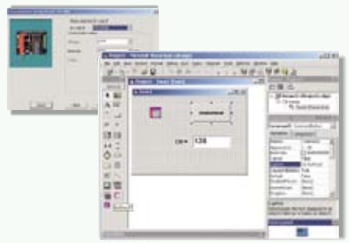
Master parameter setting screen

Tree menu screen

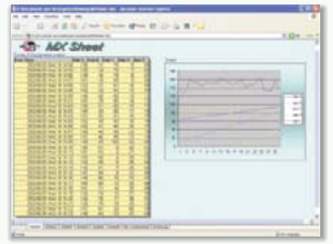
Remote parameter setting screen

●MX Series Designed to Link Office to Shop Floor

MX Component of the MX Series supports a variety of communication methods from PCs to programmable controllers. Its ActiveX® based library achieves communication with only a simple process without having to consider protocol communication issues. MX Components is suitable for the sites where a diverse application requirements needs to be met and speed is required in system configuration and modifications. MX Component drastically reduces communication program development time and improves efficiency. Additionally, MX Components supports a variety of development languages, such as Visual Basic®, Visual C++®, Excel/Access VBA, and VBScript, enabling a broad range of application developments.



MX Component



MX Sheet

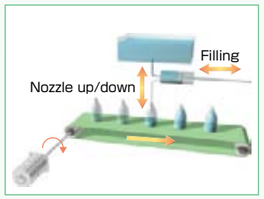
●Positioning Module

QnAS For QnASCPU
AnS For AnSCPU

Positioning modules are connected to servo amplifiers and servo motors, and controls (calculates and instructs) positioning of a target object at a preset position or speed. Using with GX Configurator-AP (positioning module setting/monitoring tool for A1SD75P), setting the positioning parameters and data and monitoring are easier.

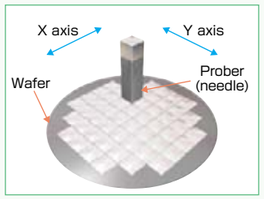
Application example: Filling device line
Move bottles to the filling nozzle position and control the nozzle position and filling speed to prevent from forming bubbles.

Bottle movement: Fixed-feed rate
Nozzle up/down: Position control
Fluid filling: Speed control



Application example: Semiconductor related equipment
Control accurate positioning (X/Y axes) to inspect a wafer prober and tester for each chip on the wafer.

Prober movement: 2-axis (X/Y) linear interpolation control



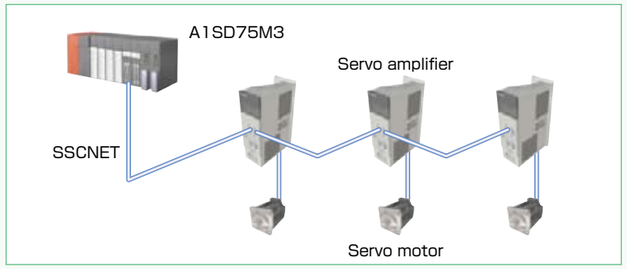
●SSCNET Connection Type

- Connectable to Mitsubishi SSCNET servo amplifiers up to 30 m with minimum wiring.
- An absolute position system that does not require original point recovery of machine can be constructed easily.
- Equipped with a variety of control methods, such as PTP (Point to Point) control, fixed-feed rate control, and 2-axis linear/circular interpolation control.
- Transmitting parameters to the servo amplifiers and monitoring are capable from the positioning modules.

Item	A1SD75M1 QnAS AnS	A1SD75M2 QnAS AnS	A1SD75M3 QnAS AnS
No. of control axes	1 axis	2 axes	3 axes
Control unit	mm, inch, degree, pulse		
Positioning range *1	-2147483648 to 2147483647 pulse (Can be set in mm, inches, or degrees.)		
Speed command	1 to 1000000 pulse/s (Can be set in mm/min, inch/min, or degree/min.)		
Control method	PTP control, path control (linear and circular), speed control, speed/position changeover control		
Max. output command speed	1 Mpps		
Interpolation function	–	2-axis linear interpolation, 2-axis circular interpolation	

*1: The positioning range is applicable when an absolute position system is not used.

SSCNET connection example



●Open Collector/Differential Driver Output Type

- Open collector/differential driver output type for standard servo amplifiers.
- Being compatible with stepping motors, systems can be constructed depending on application requirements.
- Equipped with a variety of control methods, such as PTP (Point to Point) control, fixed-feed rate control, and 2-axis linear/circular interpolation control.

Item	A1SD75P1-S3 QnAS AnS	A1SD75P2-S3 QnAS AnS	A1SD75P3-S3 QnAS AnS
No. of control axes	1 axis	2 axes	3 axes
Control unit	mm, inch, degree, pulse		
Positioning range *1	-2147483648 to 2147483647 pulse (Can be set in mm, inches, or degrees.)		
Speed command	1 to 1000000 pulse/s (Can be set in mm/min, inch/min, or degree/min.)		
Control method	PTP control, path control (linear and circular), speed control, speed/position changeover control		
Max. output pulse	Differential driver: 400 kpps, open collector: 200 kpps		
Interpolation function	–	2-axis linear interpolation, 2-axis circular interpolation	

*1: The positioning range is applicable in the standard mode.

●Analog Input Module

QnAS For QnASCPU
AnS For AnSCPU

The analog input modules convert input analog values (voltage or current) to digital values.
- The most suitable type can be selected based on the number of channels, analog input characteristics, resolution, etc.

Item		A1S64AD QnAS AnS	A1S68AD QnAS AnS
Analog input range	Voltage	-10 to 10 V DC	
	Current	-20 to 20 mA DC	0 to 20 mA DC
Resolution	Voltage	2.5/1.25/0.83 mV	5/2.5/1.25/1 mV
	Current	10/5/3.33 μA	5/4 μA
No. of channels		4	8
Conversion speed		20 ms/channel	0.5 ms/channel

●Analog Output Module

QnAS For QnASCPU
AnS For AnSCPU

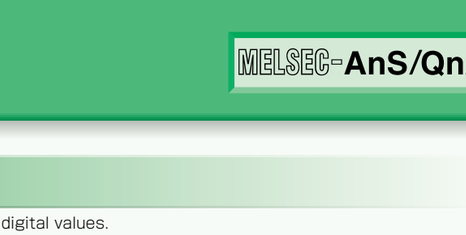
The analog output modules convert the set digital values to analog values (voltage or current) and then output them externally.
- The most suitable type can be selected based on the number of channels, analog output characteristics, resolution, etc.

Item		A1S62DA QnAS AnS	A1S68DAV QnAS AnS	A1S68DAI QnAS AnS
Analog output range	Voltage	-10 to 10 V DC		—
	Current	0 to 20 mA DC	—	4 to 20 mA DC
Resolution	Voltage	2.5/1.25/0.83 mV	5 mV	—
	Current	5/2.5/1.7 μA	—	4 μA
No. of channels		2	8	
Conversion speed		25 ms/2 channels	4 ms/8 channels	

●Temperature Control Module

QnAS For QnASCPU
AnS For AnSCPU

The temperature control modules input temperature data of a controlled object from a temperature sensor and maintain temperature at the set value.
- By connecting a thermocouple or platinum RTD directly, an optimum temperature control (PID control) is available.
- Can control heating-cooling up to two loops.
- Can control temperature up to four loops.
- A1S64TCTRTBW can detect heater disconnection.



Item	A1S64TCTRT QnAS AnS	A1S64TCTRTBW QnAS AnS
Control output	Standard control (heating or cooling control), heating-cooling control	
No. of temperature input points	Standard control : 4 channels/module, heating-cooling control : 2 channels/module	
Supported sensors	Thermocouple (R, K, J, T, S, B, E, N, U, L, PLⅡ, W5Re/W26Re), Platinum RTD (Pt100, JPt100)	
Sampling cycle	Standard control : 0.5 s/4 channels, heating-cooling control : 0.5 s/ 2 channels	
Disconnection detection	No	Yes

●Temperature Input Module

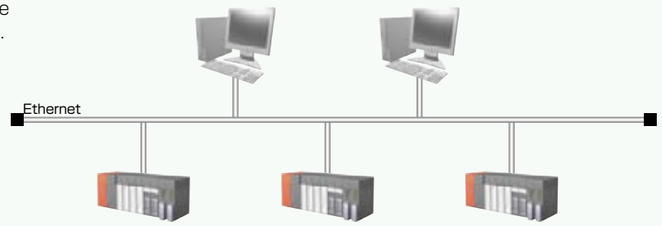
QnAS For QnASCPU
AnS For AnSCPU

The temperature input modules input temperature data from a temperature sensor and convert the value into the digital value.
- The most suitable type can be selected based on the measurement temperature, number of channels, resolution, etc.

Item	A1S68TD QnAS AnS	A1S62RD3N QnAS AnS	A1S62RD4N QnAS AnS
Supported sensors	Thermocouple (R, K, J, T, S, B, E)	Pt100, JPt100 (3-wire type)	Pt100, JPt100 (4-wire type)
No. of channels	8	2	
Temperature input range	0 to 1700℃	−180 to 600℃	
Resolution	B, R, S : 0.3℃ K, E, J, T : 0.1℃	0.025℃	
Conversion speed	400 ms/8 channels	40 ms/channel	

●Ethernet Interface Module QnAS For QnASCPU AnS For AnSCPU

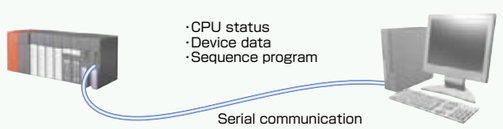
- Communication between the PC and programmable controller or between programmable controllers can be performed via Ethernet.
- The communication program for the PC can be simplified using MELSEC communication support tools (MX Component etc.). The module can be selected based on the interface (10BASE5, 10BASE-T, or 10BASE2).



Item	A1SJ71QE71N3-T QnAS A1SJ71E71N3-T AnS
Interface	10BASE-T
Data transmission speed	10 Mbps
Max. distance between nodes	—
Max. segment length	100 m (between hub and node)
Max. no. of nodes/connection	Max. 4 stages cascade connection
No. of simultaneously open connections allowed	8

●Serial Communication Module QnAS For QnASCPU

An RS-232 or RS-422/RS-485 interface is used to perform data exchange between external devices (PCs, printers, display devices, sensors, measurement devices, etc.) and the programmable controller CPU. The communication program for the PC can be simplified using MELSEC communication support tools (MX Component etc.).



- Have two channels of RS-232 or one RS-232 and one RS-422/485, allowing to set each channel differently.
- Registration of the communication frame and ASCII/BIN code conversion are available based on the external device.
- Compatible with computer link modules and can be incorporated into a multidrop link.

Item	A1SJ71QC24N1 QnAS	A1SJ71QC24N1-R2 QnAS
Interface	RS-232×1 channel, RS-422/485×1 channel	RS-232×2 channels
Transmission speed	300 to 115200 bps	
Synchronization method	Asynchronous method	
Protocol	Dedicated, nonprocedural, bidirectional	
Compatibility	Compatible with A1SJ71UC24-R2/PRF/R4 communication protocols	
Modem support function	Yes	

●Computer Link Module AnS For AnSCPU

An RS-232 or RS-422/RS-485 interface is used to perform data exchange between external devices (PCs, printers, etc.) and the programmable controller CPU. The communication program for the PC can be simplified using MELSEC communication support tools (MX Component etc.).
(Support dedicated, nonprocedural, and bidirectional protocols. Communication based on the application or external device is capable.)

- Monitoring the status of programmable controller CPU and uploading/downloading device data and programs are possible.

Item	A1SJ71UC24-R4 AnS	A1SJ71UC24-R2 AnS	A1SJ71UC24-PRF AnS
Interface	RS422/485×1 channel	RS-232×1 channel	
Transmission speed	300 to 19200 bps		
Synchronization method	Asynchronous method		
Protocol	Dedicated, nonprocedural, bidirectional		
Multidrop link function	Yes	No	

●Interrupt Module QnAS For QnASCPU AnS For AnSCPU

When an interrupt input occurs, the interrupt module makes programmable controller CPU execute the specified interrupt programs.

Item		A1SI61 QnAS AnS
No. of interrupt input points		16 points
Rated input	Voltage	12/24 V DC
	Current	4 mA(12 V DC)/8 mA(24 V DC)
Response time		0.2 ms

●High Speed Counter Module QnAS For QnASCPU AnS For AnSCPU

This module counts externally input pulse signals, compares the value with the preset value, and outputs a signal.

- Support low speed input pulses by counting speed switching pin. (A1SD61, A1SD62, A1SD62E, A1SD62D, A1SD62D-S1)
- External output by the comparison results (<, =, >) is available. (A1SD61)

Item	A1SD61 QnAS AnS	A1SD62 QnAS AnS	A1SD62E QnAS AnS	A1SD62D QnAS AnS	A1SD62D-S1 QnAS AnS
No. of channels	1	2			
Input method	Photocoupler (5/12/24 V DC: 2 to 5 mA)			Differential line receiver	
Input format	1-phase, 2-phase				
Max. counting speed	50 kpps	100 kpps		200 kpps	
No. of external output points	8 (comparison output)	2/channel (coincidence output)			1/channel (coincidence output)
External output method (transistor output 12/24 V DC)	Open collector	Sink type	Source type	Sink type	

●Position Detection Module QnAS For QnASCPU AnS For AnSCPU

The position of the target object is detected with a signal input from the absolute encoder.

Item	A1S62LS QnAS AnS
Position detection method	Absolute position detection by absolute encoder
Resolution	4096 divisions × 32 rotations to 409.6 divisions × 320 rotations
Output	Limit switch output

●Analog I/O Module QnAS For QnASCPU AnS For AnSCPU

Analog-digital conversion (A/D conversion) and digital-analog conversion (D/A conversion) can be performed with a single module.

Item		A1S66ADA QnAS AnS		A1S63ADA QnAS AnS	
		(A/D conversion)	(D/A conversion)	(A/D conversion)	(D/A conversion)
Analog I/O	Voltage	-10 to 10 V DC			
	Current	0 to 20 mA DC		-20 to 20 mA DC	0 to 20 mA DC
Resolution	Voltage	5/2.5/1.25/1 mV		2.5/1.25/0.83 mV	
	Current	5/4 μA		10/5/3.33 μA	5/2.5/1.7 μA
No. of channels		4	2	2	1
Conversion speed		400 μs/4 channels	240 μs/2 channels	1ms/channel (at 1/4000) 2ms/channel (at 1/8000) 3ms/channel (at 1/12000)	

General Specifications

●AS-i Master Module QnAS For QnASCPU AnS For AnSCPU

This is an AS-Interface Specification Version 2.04 compatible master module.
- Has two interfaces for AS-i system and can control 31 slave modules per system.
- The overall distance is 100 m. However, this can be extended to a maximum of 300 m with two repeaters.
- Supports automatic slave address assignment function (Automatic address assignment function).

Item	A1SJ71AS92 QnAS AnS
Max. no. of slaves	62 (31 × 2 systems)
Max. no. of I/O points	Input: 248 points, output: 248 points
Refresh time	5 ms
Communication speed	167 kbps
Transmission distance	Max. 100 m/system (up to 300 m possible with 2 repeaters)

General specifications indicate the environmental specifications in which this product can be installed and operated. Unless otherwise specified, the general specifications apply to all products of the AnS/QnAS Series.

<table>
<tr><th>Item</th><th colspan="5">Specifications</th></tr>
<tr><td>Operating ambient temperature</td><td colspan="5">0 to 55℃</td></tr>
<tr><td>Storage ambient temperature</td><td colspan="5">−20 to 75℃</td></tr>
<tr><td>Operating ambient humidity</td><td colspan="5">10 to 90%RH, non-condensing</td></tr>
<tr><td>Storage ambient humidity</td><td colspan="5">10 to 90%RH, non-condensing</td></tr>
<tr><td rowspan="8">Vibration resistance</td><td rowspan="8">Conforming to JIS B 3502, IEC 61131-2</td><td colspan="3">Under intermittent vibration</td><td>Sweep count</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td>Amplitude</td><td rowspan="6">10 times each in X, Y, Z directions (for 80 minutes)</td></tr>
<tr><td>10 to 57 Hz</td><td>—</td><td>0.075 mm</td></tr>
<tr><td>57 to 150 Hz</td><td>9.8 m/s^2</td><td>—</td></tr>
<tr><td colspan="3">Under continuous vibration</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td>Amplitude</td></tr>
<tr><td>10 to 57 Hz</td><td>—</td><td>0.035 mm</td></tr>
<tr><td>57 to 150 Hz</td><td>4.9m/s^2</td><td>—</td></tr>
<tr><td>Shock resistance</td><td colspan="5">Conforming to JIS B 3502, IEC 61131-2 (147 m/s^2, 3 times each in X, Y, Z directions)</td></tr>
<tr><td>Operating atmosphere</td><td colspan="5">No corrosive gases</td></tr>
<tr><td>Operating altitude</td><td colspan="5">2000 m or less</td></tr>
<tr><td>Installation location</td><td colspan="5">Inside control panel</td></tr>
<tr><td>Overvoltage category *1</td><td colspan="5">II or less</td></tr>
<tr><td>Pollution degree *2</td><td colspan="5">2 or less</td></tr>
</table>

*1: This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category II applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.

*2: This index indicates the degree to which conductive material is generated in the environment where the equipment is used. In pollution degree 2, only non-conductive pollution occurs. Temporary conductivity caused by condensation is to be expected.

(Notes)
(1) Noise immunity, withstand voltage, and insulation resistance will differ depending on the module. Please refer to the specifications of each module for details.
(2) Please consult your local Mitsubishi representative when using the device in a location susceptible to direct vibrations or impact.

●CPU Performance Specifications QnAS

Item			Q2ASHCPU-S1	Q2ASHCPU	Q2ASCPU-S1	Q2ASCPU
Programming language			Ladder/List/SFC			
I/O control mode			Refresh			
No. of I/O device points			8192 points			
No. of I/O points			1024 points	512 points	1024 points	512 points
Built-in RAM capacity			240 KB	112 KB	240 KB	112 KB
Program capacity			60 k steps	28 k steps	60 k steps	28 k steps
PC MIX value *2			3.8 instructions		1.3 instructions	
Data memory	Bit devices	Internal relay (M) *1	8192 points			
		Latch relay (L) *1	8192 points			
		Step relay (S)	8192 points (exclusively for SFC)			
		Annunciator (F) *1	2048 points			
		Edge relay (V) *1	2048 points			
		Link relay (B) *1	8192 points			
	Word devices	Timer (T) *1	2048 points (both high and low speed) Low/high-speed switching is set by instructions. Low/high-speed measurement unit is set by parameters.			
		Retentive timer (ST) *1	0 points (max. 2048 points)			
		Counter (C) *1	Counter: 1024 points Interrupt counter: 0 points (max. 48 points)			
		Data register (D) *1	12288 points			
		Link register (W) *1	8192 points			
		File register *1	Max. 1018 k words (when using memory card)			
Accumulator (A)			No			
Pointer (P)			4096 points			
Interrupt pointer (I)			48 points			
Index register (V, Z)			16 points (Z only. V is used as an edge relay.)			
Master control nesting (N)			15 points			
Data type			Integer type (16 bits), precision integer type (32 bits), single precision floating-point type (32 bits)			
Function			Floating-point calculation, fixed-point BCD calculation, text string processing, trigonometric function, square root, exponential operation, natural logarithm			
Start at power on and at power restoration			Auto restart when "RUN" switch is ON.			
Constant scan			Yes			
Latch (Power failure compensation)			Yes			
Remote RUN, STOP			Yes			
PAUSE			Yes			
Status latch			Yes			
Sampling trace			Yes			
Offline switch			No			
Step operation			Yes			
Clock			Yes			
Online I/O module change (hot-swap)			No			
Interrupt processing			Yes			
Comment			Yes			
Watch dog timer			Variable			
Microcomputer program area			No			
Self-diagnostic function			Yes			

*1: Indicates the number of points in the default state. This can be changed by the parameters.

*2: The PC MIX value is the average number of instructions, such as basic instructions or data processing instructions executed in 1 μs. The processing speed will rise as the value increases.

●CPU Performance Specifications AnS

Item			A2USHCPU-S1	A2USCPU	A2SHCPU	A1SJHCPU A1SHCPU
Programming language			Ladder/List/SFC			
I/O control mode			Refresh		Refresh/ direct switching	
No. of I/O device points			8192 points		2048 points	
No. of I/O points			1024 points	512 points		256 points
Built-in RAM capacity			256 KB	64 KB		
Program capacity			30 k steps	14 k steps		8 k steps
PC MIX value *2			2.0 instructions	0.9 instructions	0.5 instructions	0.4 instructions
Data memory	Bit devices	Internal relay (M) *1	Total 8192 points		Total 2048 points	
		Latch relay (L) *1				
		Step relay (S)				
		Annunciator (F) *1	2048 points		256 points	
		Edge relay (V) *1	No			
		Link relay (B) *1	8192 points		1024 points	
	Word devices	Timer (T) *1	100 ms timer: 200 points 10 ms timer: 56 points 100 ms retentive timer: 0 points (total of up to 2048 points when using extension timer)			
		Retentive timer (ST) *1				
		Counter (C) *1	Counter: 1024 points Interrupt counter: 0 points (max. 32 points)		Counter: 256 points Interrupt counter: 0 points (max. 256 points)	
		Data register (D) *1	8192 points		1024 points	
		Link register (W) *1	8192 points		1024 points	
		File register *1	0 points (max. 8192 points)			
Accumulator (A)			2 points (16 bits/point)			
Pointer (P)			256 points			
Interrupt pointer (I)			32 points			
Index register (V, Z)			14 points (16 bits/point)		2 points (16 bits/point)	
Master control nesting (N)			8 points			
Data type			Integer type (16 bits), precision integer type (32 bits), single precision floating-point type (32 bits)			
Function			Floating-point calculation, fixed-point BCD calculation, text string processing, trigonometric function, square root, exponential operation, natural logarithm		No	
Start at power on and at power restoration			Auto restart when "RUN" switch is ON.			
Constant scan			Yes			
Latch (Power failure compensation)			Yes			
Remote RUN, STOP			Yes			
PAUSE			Yes			
Status latch			Yes			
Sampling trace			Yes			
Offline switch			No		Yes	
Step operation			Yes		No	
Clock			Yes			
Online I/O module change (hot-swap)			No			
Interrupt processing			Yes			
Comment			Yes			
Watch dog timer			200 ms (fixed)		Variable	
Microcomputer program area			Exclusively for SFC		For users, packages, SFC	
Self-diagnostic function			Yes			

*1: Indicates the number of points in the default state. This can be changed by the parameters.

*2: The PC MIX value is the average number of instructions such as basic instructions or data processing instructions executed in 1 μs. The processing speed will rise as the value increases.

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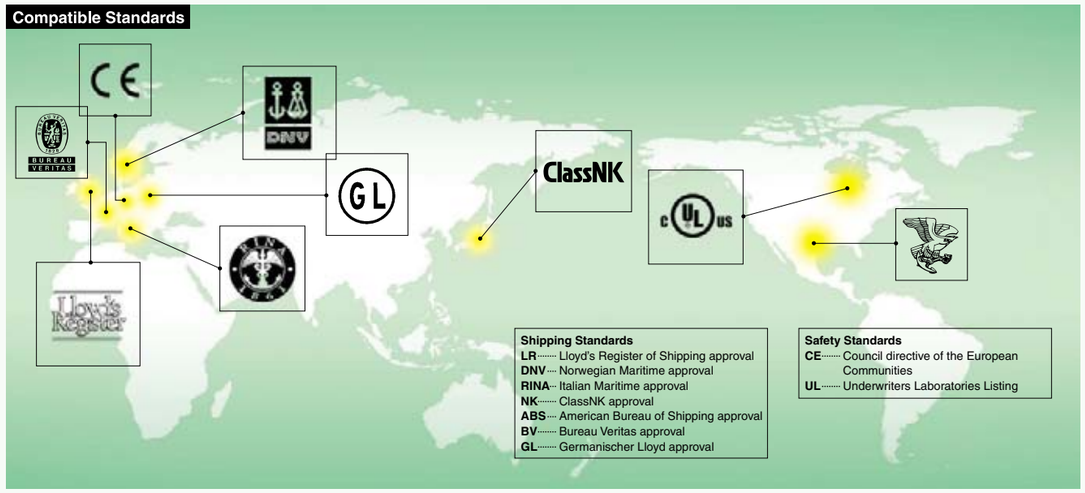
All of Mitsubishi Electric's FA component products have acquired the international quality assurance "ISO9001" and environment management system standard "ISO14001" certification. Mitsubishi's products also comply with various safety standards, including UL Standards, and shipping standards.

Compatible Standards



Global FA centers

"Mitsubishi Global FA Centers" are located throughout North America, Europe, and Asia to develop products complying with international standards and to provide attentive services.

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◎Brazil FA Center

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Area covered: Thailand

QnAS

CPU, base, power supply

Product		Model	Outline
CPU		Q2ASCPU	No. of I/O points: 512 points, no. of I/O device points: 8192 points, program capacity: 28 k steps, basic instruction processing speed (LD instruction): 0.20 μs
		Q2ASCPU-S1	No. of I/O points: 1024 points, no. of I/O device points: 8192 points, program capacity: 60 k steps, basic instruction processing speed (LD instruction): 0.20 μs
		Q2ASHCPU	No. of I/O points: 512 points, no. of I/O device points: 8192 points, program capacity: 28 k steps, basic instruction processing speed (LD instruction): 0.075 μs
		Q2ASHCPU-S1	No. of I/O points: 1024 points, no. of I/O device points: 8192 points, program capacity: 60 k steps, basic instruction processing speed (LD instruction): 0.075 μs
Base	Main base	A1S38HB	8 slots, power supply module required, for QnAS and AnS Series modules, high-speed access for QnAS Series
		A1S38HBEU	8 slots, power supply module required, for QnAS and AnS Series modules, high-speed access for QnAS Series, CE compliant
		A1S38B	8 slots, power supply module required, for QnAS/AnS Series modules
		A1S35B	5 slots, power supply module required, for QnAS/AnS Series modules
		A1S33B	3 slots, power supply module required, for QnAS/AnS Series modules
		A1S32B	2 slots, power supply module required, for QnAS/AnS Series modules
	Extension base	A1S58B	8 slots, power supply module not required, for QnAS/AnS Series modules
		A1S55B	5 slots, power supply module not required, for QnAS/AnS Series modules
		A1S52B	2 slots, power supply module not required, for QnAS/AnS Series modules
		A1S68B	8 slots, power supply module required, for QnAS/AnS Series modules
		A1S65B	5 slots, power supply module required, for QnAS/AnS Series modules
	Extension cable	A1SC01B	For extension base horizontal connection, 0.055 m *One cable per extension base required
		A1SC03B	For extension base connection, 0.3 m *One cable per extension base required
		A1SC07B	For extension base connection, 0.7 m *One cable per extension base required
		A1SC12B	For extension base connection, 1.2 m *One cable per extension base required
		A1SC30B	For extension base connection, 3 m *One cable per extension base required
		A1SC60B	For extension base connection, 6 m *One cable per extension base required
	Blank cover	A1SG60	Blank cover for I/O slot
Power supply		A1S61PN	Input voltage range: 100 to 240 V AC, output voltage: 5 V DC, output current: 5 A
		A1S62PN	Input voltage range: 100 to 240 V AC, output voltage: 5/24 V DC, output current: 3/0.6 A
		A1S63P	Input voltage range: 24 V DC, output voltage: 5 V DC, output current: 5 A
Battery		A6BAT	For IC-RAM memory/A7HGP CMOS back-up
Memory card		Q1MEM-64S	SRAM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 64 KB
		Q1MEM-128S	SRAM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 128 KB
		Q1MEM-256S	SRAM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 256 KB
		Q1MEM-512S	SRAM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 512 KB
		Q1MEM-1MS	SRAM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 1 MB
		Q1MEM-2MS	SRAM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 2 MB
		Q1MEM-64SE	SRAM+E2PROM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 32 KB, E2PROM capacity: 32 KB
		Q1MEM-128SE	SRAM+E2PROM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 64 KB, E2PROM capacity: 64 KB
		Q1MEM-256SE	SRAM+E2PROM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 128 KB, E2PROM capacity: 128 KB
		Q1MEM-512SE	SRAM+E2PROM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 256 KB, E2PROM capacity: 256 KB
		Q1MEM-1MSE	SRAM+E2PROM memory card (JEIDA Ver.4.1 compliant), RAM capacity: 512 KB, E2PROM capacity: 512 KB

QnAS

I/O module

Product		Model	Outline
Input	DC (Positive common)	A1SX40	16 points, 12/24 V DC, 3/7 mA, response time:10 ms, 16 points/common, positive common, 20-point terminal block
		A1SX40-S1	16 points, 24 V DC, 7 mA, response time: 0.2 ms, 16 points/common, positive common, 20-point terminal block, high-speed input
		A1SX40-S2	16 points, 24 V DC, 7 mA, response time: 10 ms, 16 points/common, positive common, 20-point terminal block, for high leakage current sensor
		A1SX41	32 points, 12/24 V DC, 3/7 mA, response time: 10 ms, 32 points/common, positive common, 40-pin connector
		A1SX41-S1	32 points, 24 V DC, 7 mA, response time: 0.3 ms, 32 points/common, positive common, 40-pin connector, high-speed input
		A1SX41-S2	32 points, 24 V DC, 7 mA, response time: 10 ms, 32 points/common, positive common, 40-pin connector, for high leakage current sensor
		A1SX42	64 points, 12/24 V DC, 2/5 mA, response time: 10 ms, 32 points/common, positive common, 40-pin connector
		A1SX42-S1	64 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common, positive common, 40-pin connector, high-speed input
		A1SX42-S2	64 points, 24 V DC, 5 mA response time: 10 ms, 32 points/common, positive common, 40-pin connector, for high leakage current sensor
	Dynamic input	A1S42X	16/32/48/64 points, 12/24 V DC, 4/9 mA, response time: 0.4 ms, 24-pin connector, high-speed dynamic input
	AC100	A1SX10	16 points, 100 to 120 V AC, 6 mA, response time: 35 ms, 16 points/common, 20-point terminal block
		A1SX10EU	16 points, 100 to 120 V AC, 7 mA, response time: 35 ms, 16 points/common, 20-point terminal block, CE compliant
	AC200	A1SX20	16 points, 200 to 240 V AC, 9 mA, response time: 55 ms, 16 points/common, 20-point terminal block
		A1SX20EU	16 points, 200 to 240 V AC, 11 mA, response time: 55 ms, 16 points/common, 20-point terminal block, CE compliant
	DC (Positive/negative common)	A1SX71	32 points, 5/12/24 V DC, 1.2/3.3/7 mA, response time: 3 ms, 32 points/common, positive/negative common, 40-pin connector
		A1SX80	16 points, 12/24 V DC, 3/7 mA, response time: 10 ms, 16 points/common, positive/negative common, 20-point terminal block
		A1SX80-S1	16 points, 24 V DC, 7 mA, response time: 0.5 ms, 16 points/common, positive/negative common, 20-point terminal block, high-speed input
		A1SX80-S2	16 points, 24 V DC, 7 mA, response time: 10 ms, 16 points/common, positive/negative common, 20-point terminal block, for high leakage current sensor
		A1SX81	32 points, 12/24 V DC, 3/7 mA, response time: 10 ms, 32 points/common, positive/negative common, 37-pin D-sub connector
		A1SX81-S2	32 points, 24 V DC, 7 mA, response time: 10 ms, 32 points/common, positive/negative common, 37-pin D-sub connector, for high leakage current sensor
		A1SX82-S1	64 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common, positive/negative common, 40-pin connector, high-speed input
	AC/DC	A1SX30	16 points, 12 V AC/24 V AC/12 V DC/24 V DC, 4.2 mA (12 V AC, 12 V DC)/8.6 mA (24 V AC, 24 V DC), response time: 2.5 ms, 16 points/common, 20-point terminal block
Output	Relay	A1SY10	16 points, 24 V DC/240 V AC, 2 A/point, 8 A/common, response time: 12 ms, 8 points/common, 20-point terminal block
		A1SY10EU	16 points, 24 V DC/120 V AC, 2 A/point, 8 A/common, response time: 12 ms, 8 points/common, 20-point terminal block, CE compliant
		A1SY14EU	12 points, 24 V DC/240 V AC, 2 A/point, 8 A/common, response time: 12 ms, 4 points/common, 20-point terminal block, CE compliant
		A1SY18A	8 points, 24 V DC/240 V AC, 2 A/point, 8 A/module, response time: 12 ms, all points independent, 20-point terminal block
		A1SY18AEU	8 points, 24 V DC/240 V AC, 2 A/point, response time: 12 ms, all points independent, 20-point terminal block, CE compliant
	Triac	A1SY22	16 points, 100/240 V AC, leakage at OFF: 1.5 mA (120 V AC), 3 mA (240 V AC), response time: 0.5 Hz + 1 ms, 8 points/common, 20-point terminal block, with fuse and surge suppressor
		A1SY28A	8 points, 100 to 240 V AC, leakage at OFF: 1.5 mA (120 V AC), 3 mA (240 V AC), response time: 0.5 Hz + 1 ms, all points independent, 20-point terminal block, with surge suppressor
	Dynamic output	A1S42Y	16/32/48/64 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 24-pin connector, with fuse, dynamic output

QnAS

I/O module

Product		Model	Outline
Output	Transistor (Sink)	A1SY40P	16 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 1 ms, 8 points/common, sink type, 20-point terminal block, with thermal/short-circuit protection and surge suppressor
		A1SY41P	32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 1 ms, 32 points/common, sink type, 40-pin connector, with thermal/short-circuit protection and surge suppressor
		A1SY42P	64 points, 2/24 V DC, leakage at OFF: 0.1 mA, response time: 1 ms, 32 points/common, sink type, 40-pin connector, with thermal/short-circuit protection and surge suppressor
		A1SY50	16 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, sink type, 20-point terminal block, with fuse and surge suppressor
		A1SY60	16 points, 24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, sink type, 20-point terminal block, with fuse and surge suppressor
	Transistor (Source)	A1SY60E	16 points, 5/12/24 V DC, leakage at OFF: 0.1 mA, response time: 10 ms, 8 points/common, source type, 20-point terminal block, with fuse and surge suppressor
	Transistor	A1SY68A	8 points, 5/12/24/48 V DC, leakage at OFF: 0.1 mA, response time: 10 ms, all points independent, 20-point terminal block, with surge suppressor
	TTL CMOS	A1SY71	32 points, 5/12 V DC, response time: 1 ms, 32 points/common, sink type, 40-pin connector, with fuse
	Transistor (Source)	A1SY80	16 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, source type, 20-point terminal block, with fuse and surge suppressor
		A1SY81	32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, source type, 37-pin D-sub connector, with fuse and surge suppressor
		A1SY82	64 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, source type, 40-pin connector, with fuse and surge suppressor
I/O	DC/transistor	A1SH42	Input: 32 points, 12/24 V DC, 2/5 mA, response time: 10 ms, 32 points/common; output 32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, with fuse and surge suppressor; 40-pin connector
		A1SH42-S1	Input: 32 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common; output 32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, with fuse and surge suppressor; 40-pin connector
		A1SH42P	Input: 32 points, 12/24 V DC, 2/5 mA, response time: 10 ms, 32 points/common, positive common; output: 32 points, 12/24 V DC leakage at OFF: 0.1 mA, response time: 1 ms, 32 points/common, sink type, with thermal/short-circuit protection and surge suppressor; 40-pin connector
		A1SH42P-S1	Input: 32 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common, positive common, high-speed input; output: 32 points, 12/24 V DC leakage at OFF: 0.1 mA, response time: 1 ms, 32 points/common, sink type, with thermal/short-circuit protection and surge suppressor; 40-pin connector
	DC/relay	A1SX48Y18	Input: 8 points, 24 V DC, 7 mA, response time: 10 ms, 8 points/common, positive common; output 8 points, 24 V DC/240 V AC, 2 A/point, 8 A/common, response time: 12 ms, 8 points/common; 20-point terminal block
	DC/transistor	A1SX48Y58	Input: 8 points, 24 V DC, 7 mA, response time: 10 ms, 8 points/common, positive common; output 8 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, with fuse and surge suppressor; 20-point terminal block
Connector		A6CON1	40-pin connector, soldering type
		A6CON2	40-pin connector, crimp-contact type
		A6CON3	40-pin connector, IDC for flat cables
		A6CON4	40-pin connector, soldering type (bidirectional cable connectable)
		A6CON1E	37-pin D-sub connector, soldering type
		A6CON2E	37-pin D-sub connector, crimp-contact type
		A6CON3E	37-pin D-sub connector, IDC for flat cables
Connector/terminal block conversion module		A6TBX36-E	For negative common input modules (standard type)
		A6TBX54-E	For negative common input modules (2-wire type)
		A6TBX70	For positive common input modules (3-wire type)
		A6TBX70-E	For negative common input modules (3-wire type)
		A6TBY36-E	For source type output modules (standard type)
		A6TBY54-E	For source type output modules (2-wire type)
		A6TBXY36	For positive common input modules and sink type output modules (standard type)
		A6TBXY54	For positive common input modules and sink type output modules (2-wire type)

QnAS

I/O module

Product		Model	Outline
Connector/ terminal block conversion module	Cable	AC05TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 0.5 m
		AC10TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 1 m
		AC20TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 2 m
		AC30TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 3 m
		AC50TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 5 m
		AC80TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 8 m *Common power supply 0.5 A or lower
		AC100TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 10 m *Common power supply 0.5 A or lower
		AC05TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 0.5 m
		AC10TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 1 m
		AC20TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 2 m
		AC30TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 3 m
		AC50TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 5 m
Relay terminal module		A6TE2-16SRN	16 points, 24 V DC/240 V AC, ZA/point, 8 A/common, response time: 12 ms, 8 points/common, 40-pin connector
Relay terminal module	Cable	AC06TE	For A6TE2-16SRN, 0.6 m
		AC10TE	For A6TE2-16SRN, 1 m
		AC30TE	For A6TE2-16SRN, 3 m
		AC50TE	For A6TE2-16SRN, 5 m
		AC100TE	For A6TE2-16SRN, 10 m
Interrupt input		A1SI61	Interrupt input: 16 points, 12/24 V DC, 4/8 mA, response time: 0.2 ms, 16 points/common, 20-point terminal block
Dummy module		A1SG62	16/32/48/64-point dummy module
Conversion adapter	AnS conversion adapter	A1S-TA32	32-point IDC terminal block adapter, 0.5 mm² (AWG20)
		A1S-TA32-3	32-point IDC terminal block adapter, 0.3 mm² (AWG22)
		A1S-TA32-7	32-point IDC terminal block adapter, 0.75 mm² (AWG18)
		A1S-TB32	32-point terminal block adapter, 0.14 to 0.75 mm² (AWG26 to 18), for conversion to European type terminal block

Analog I/O module

Product		Model	Outline
Analog input	Voltage/ current input	A1S64AD	4 channels; input: -10 to 10 V DC, -20 to 20 mA; output (resolution): -4000 to 4000, -8000 to 8000, -12000 to 12000; conversion speed: 20 ms/channel; 20-point terminal block
		A1S68AD	8 channels; input: -10 to 10 V DC, 0 to 20 mA; output (resolution): 0 to 4000, -2000 to 2000; conversion speed: 0.5 ms/channel; 20-point terminal block
Analog output	Voltage/ current output	A1S62DA	2 channels; input (resolution): -4000 to 4000, 0 to 4000 / -8000 to 8000, 0 to 8000 / -12000 to 12000, 0 to 12000; output: -10 to 10 V DC, 0 to 20 mA; conversion speed: 25 ms/2 channels; 20-point terminal block
		A1S68DAV	8 channels, input (resolution): -2000 to 2000, output: -10 to 10 V DC, conversion speed: 4 ms/8 channels, 20-point terminal block
		A1S68DAI	8 channels, input (resolution): 0 to 4000, output: 4 to 20 mA DC, conversion speed: 4 ms/8 channels, 20-point terminal block
Analog I/O		A1S63ADA	Analog input: 2 channels; input: -10 to 10 V DC, -20 to 20 mA; analog output: 1 channel; output: -10 to 10 V DC, 0 to 20 mA; resolution: 1/4000, 1/8000, 1/12000; conversion speed: 3 ms/channel (at 1/12000); 20-point terminal block
		A1S66ADA	Analog input: 4 channels; analog output: 2 channels; analog I/O: -10 to 10 V DC, 0 to 20 mA; resolution: 1/4000; conversion speed: 400 μs/4 channels (analog input), 240 μs/2 channels (analog output); 20-point terminal block
Temperature input	Platinum RTD	A1S62RD3N	2 channels, 3-wire type platinum RTD (Pt100 [JIS C1604-1997, IEC 751-am2, JIS C1604-1989, DIN 43760-1980], JPt100 [JIS C1604-1981]), conversion speed: 40 ms/channel, 20-point terminal block
		A1S62RD4N	2 channels, 4-wire type platinum RTD (Pt100 [JIS C1604-1997, IEC 751-am2, JIS C1604-1989, DIN 43760-1980], JPt100 [JIS C1604-1981]), conversion speed: 40 ms/channel, 20-point terminal block
	Thermocouple	A1S68TD	8 channels, thermocouple (K, E, J, T, B, R, S), conversion speed: 400 ms/8 channels, 20-point terminal block
Temperature control		A1S64TCTRT	Standard control: 4 channels, heating-cooling control: 2 channels; thermocouple (K, J, T, B, S, E, R, N, U, L, PLII, W5Re/W26Re), platinum RTD (Pt100, JPt100); sampling cycle: 0.5 s/4 channels (standard control), 0.5 s/2 channels, (heating-cooling control); 20-point terminal block
		A1S64TCTRTBW	Standard control: 4 channels, heating-cooling control: 2 channels; thermocouple (K, J, T, B, S, E, R, N, U, L, PLII, W5Re/W26Re), platinum RTD (Pt100, JPt100); sampling cycle: 0.5 s/4 channels (standard control), 0.5 s/2 channels, (heating-cooling control); with heater disconneciton detection; 20-point terminal block

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Pulse I/O and positioning module

Product		Model	Outline
High speed counter		A1SD61	1 channel; 50/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; comparison output: transistor (open collector), 12/24 V DC, 0.1 A/point, 0.8 A/common; 20-point terminal block
		A1SD62	2 channels; 100/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 20-point terminal block
		A1SD62E	2 channels; 100/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; conincidence output: transistor (source), 12/24 V DC, 0.1 A/point, 0.4 A/common; 20-point terminal block
		A1SD62D	2 channels; 200/10 kpps; count input signal: RS-422-A (differential line driver); external input: 5/12/24 V DC, coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 20-point terminal block
		A1SD62D-S1	2 channels; 200/10 kpps; count input signal: RS-422-A (differential line driver); external input: RS-422-A (differential line driver); coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 20-point terminal block
Positioning		A1SD70	1 axis, control unit: pulse, no. of positioning data: 1 piece/axis, 15-pin connector/9-pin connector, analog voltage output (-10 to 10 V DC)
Positioning	Open collector output/ Differential output	A1SD75P1-S3	1 axis; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; max. output pulse: 400 kpps (differential driver), 200 kpps (open collector); 36-pin connector
		A1SD75P2-S3	2 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; max. output pulse: 400 kpps (differential driver), 200 kpps (open collector); 36-pin connector
		A1SD75P3-S3	3 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; max. output pulse: 400 kpps (differential driver), 200 kpps (open collector); 36-pin connector
	SSCNET connection	A1SD75M1	1 axis; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; 36-pin connector; SSCNET connection
		A1SD75M2	2 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; 36-pin connector; SSCNET connection
		A1SD75M3	3 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis 36-pin connector; SSCNET connection
	Cable	AD75C20SJ2	Cable for connecting AD75P□/A1SD75P□ positioning module and MR-J2□A, 2 m
		AD75C20SNJ2	Cable for connecting AJ65BT-D75P2-S3 positioning module and MR-J2/J2S, 2 m
		A1SD75-C01HA	Conversion cable for connecting A1SD75P□/M□ and peripheral devices
	Bracket	AD75CK	Cable clamp bracket for AD75, GOT
Position detection		A1S62LS	No. of position detection axes: 1, resolution: 4096 × 32 rotations to 409.6 × 320 rotations, no. of output channels: 16

Information module

Ethernet	A1SJ71QE71N3-T	10BASE-T
Serial communication	A1SJ71QC24N1	RS-232: 1 channel, RS-422/485: 1 channel, transmission speed: 2 channels can be used simultaneously at 115.2 kbps
	A1SJ71QC24N1-R2	RS-232: 2 channels, transmission speed: 2 channels can be used simultaneously at 115.2 kbps
Intelligent communication	SW□IVD-AD51HP	Software package for QD51H, AD51H-S3, A1SD51S

Control network module

Product		Model	Outline
CC-Link		A1SJ61QBT11	Master/local station, for QnASCPU
AS-i		A1SJ71AS92	AS-i system master module
MELSECNET/10	SI/QSI optical cable	A1SJ71QLP21	SI/QSI/H-PCF/broadband H-PCF optical cable, double loop, PLC-to-PLC network (control/normal station)/remote I/O network (remote master station)
		A1SJ71QLP21S	SI/QSI/H-PCF/broadband H-PCF optical cable, double loop, PLC-to-PLC network (control/normal station)/remote I/O network (remote master station), with external supply power function
	Coaxial cable	A1SJ71QLR21	3C-2V/5C-2V coaxial cable, double loop, PLC-to-PLC network (control/normal station)/remote I/O network (remote master station)
	SI/QSI optical cable	A1SJ72QLP25	SI/QSI/H-PCF/broadband H-PCF optical cable, double loop, remote I/O network (remote I/O station)
	Coaxial cable	A1SJ72QLR25	3C-2V/5C-2V coaxial cable, double loop, remote I/O network (remote I/O station)
		A1SJ71QBR11	3C-2V/5C-2V coaxial cable, single bus, PLC-to-PLC network (control/normal station)/remote I/O network (remote master station)
		A1SJ72QBR15	3C-2V/5C-2V coaxial cable, single bus, remote I/O network (remote I/O station)
MELSECNET(II)		A1SJ71AP21	SI-200/250 optical cable, double loop, MELSECNET(II) master/local station
		A1SJ71AR21	3C-2V/5C-2V coaxial cable, double, loop MELSECNET(II) master/local station
MELSECNET/B		A1SJ71AT21B	Twisted pair cable, single bus, MELSECNET/B (master/local station)
MELSEC-I/O Link		A1SJ51T64	Twisted pair/cab-tire cable, single bus, MELSEC-I/O Link (master module)

Peripheral devices

Programming module	Cable	AC30R4	Cable for connecting CPU and A7PU/A7HGP/A6GPP, 3 m *A7HGP-SET/A6GPP-SET provided
Modem interface module		Q6TEL	Interface module to connect peripheral devices to the telephone line

AnS

CPU, base, power supply

Product		Model	Outline
CPU		A1SCPUC24-R2	No. of I/O points: 256 points, no. of I/O device points: 256 points, program capacity: 8 k steps, basic instruction processing speed (LD instruction):1.0 μs, built-in RAM memory capacity: 32 KB, with computer link function
		A1SHCPU	No. of I/O points: 256 points, no. of I/O device points: 256 points, program capacity: 8 k steps, basic instruction processing speed (LD instruction): 0.33 μs, built-in RAM memory capacity: 64 KB
		A1SJHCPU	No. of I/O points: 256 points, no. of I/O device points: 256 points, program capacity: 8 k steps, basic instruction processing speed (LD instruction): 0.33 μs, built-in RAM memory capacity: 64 KB, 5 slots, 100 to 240 V AC input/5 V DC 3 A output power supply
		A2SHCPU	No. of I/O points: 512 points, no. of I/O device points: 512 points, program capacity: 14 k steps, basic instruction processing speed (LD instruction): 0.25 μs, built-in RAM memory capacity: 64 KB
		A2USCPU	No. of I/O points: 512 points, no. of I/O device points: 8192 points, program capacity: 14 k steps, basic instruction processing speed (LD instruction): 0.2 μs, built-in RAM memory capacity: 64 KB
		A2USHCPU-S1	No. of I/O points: 1024 points, no. of I/O device points: 8192 points, program capacity: 30 k steps, basic instruction processing speed (LD instruction): 0.09 μs, built-in RAM memory capacity: 256 KB
Base	Main base	A1S38B	8 slots, power supply module required, for QnAS/AnS Series modules
		A1S35B	5 slots, power supply module required, for QnAS/AnS Series modules
		A1S33B	3 slots, power supply module required, for QnAS/AnS Series modules
		A1S32B	2 slots, power supply module required, for QnAS/AnS Series modules
	Extension base	A1S58B	8 slots, power supply module not required, for QnAS/AnS series modules
		A1S55B	5 slots, power supply module not required, for QnAS/AnS series modules
		A1S52B	2 slots, power supply module not required, for QnAS/AnS series modules
		A1S68B	8 slots, power supply module required, for QnAS/AnS Series modules
		A1S65B	5 slots, power supply module required, for QnAS/AnS Series modules
	Extension cable	A1SC01B	For extension base horizontal connection, 0.055 m * One cable per extension base required
		A1SC03B	For extension base connection, 0.3 m * One cable per extension base required
		A1SC07B	For extension base connection, 0.7 m * One cable per extension base required
		A1SC12B	For extension base connection, 1.2 m * One cable per extension base required
		A1SC30B	For extension base connection, 3 m * One cable per extension base required
		A1SC60B	For extension base connection, 6 m * One cable per extension base required
	Blank cover	A1SG60	Blank cover for I/O slot
Power supply		A1S61PN	Input voltage range: 100 to 240 V AC, output voltage: 5 V DC, output current: 5 A
		A1S62PN	Input voltage range: 100 to 240 V AC, output voltage: 5/24 V DC, output current: 3/0.6 A
		A1S63P	Input voltage range: 24 V DC, output voltage: 5 V DC, output current: 5 A
Battery		A6BAT	For IC-RAM memory/A7HGP CMOS back-up
Memory cassette		A1SNMCA-2KE	Program capacity: 2 k steps, EEPROM cassette (exclusively for A1S, A1SH, A1SJ, and A1SJH)
		A1SNMCA-8KE	Program capacity: 8 k steps, EEPROM cassette (exclusively for A1S, A1SH, A1SJ, and A1SJH)
		A1SNMCA-8KP	Program capacity: 8 k steps, EPROM cassette (exclusively for A1S, A1SH, A1SJ, and A1SJH)
		A2SNMCA-30KE	Program capacity: 30 k steps, EEPROM cassette (for A2S, A2SH, A2US(S1), and A2USH-S1)

AnS

I/O module

Product		Model	Outline
Input	DC (Positive common)	A1SX40	16 points, 12/24 V DC, 3/7 mA, response time:10 ms, 16 points/common, positive common, 20-point terminal block
		A1SX40-S1	16 points, 24 V DC, 7 mA, response time: 0.2 ms, 16 points/common, positive common, 20-point terminal block, high-speed input
		A1SX40-S2	16 points, 24 V DC, 7 mA, response time: 10 ms, 16 points/common, positive common, 20-point terminal block, for high leakage current sensor
		A1SX41	32 points, 12/24 V DC, 3/7 mA, response time: 10 ms, 32 points/common, positive common, 40-pin connector
		A1SX41-S1	32 points, 24 V DC, 7 mA, response time: 0.3 ms, 32 points/common, positive common, 40-pin connector, high-speed input
		A1SX41-S2	32 points, 24 V DC, 7 mA, response time: 10 ms, 32 points/common, positive common, 40-pin connector, for high leakage current sensor
		A1SX42	64 points, 12/24 V DC, 2/5 mA, response time: 10 ms, 32 points/common, positive common, 40-pin connector
		A1SX42-S1	64 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common, positive common, 40-pin connector, high-speed input
		A1SX42-S2	64 points, 24 V DC, 5 mA response time: 10 ms, 32 points/common, positive common, 40-pin connector, for high leakage current sensor
	Dynamic input	A1S42X	16/32/48/64 points, 12/24 V DC, 4/9 mA, response time: 0.4 ms, 24-pin connector, high-speed dynamic input
	AC100	A1SX10	16 points, 100 to 120 V AC, 6 mA, response time: 35 ms, 16 points/common, 20-point terminal block
		A1SX10EU	16 points, 100 to 120 V AC, 7 mA, response time: 35 ms, 16 points/common, 20-point terminal block, CE compliant
	AC200	A1SX20	16 points, 200 to 240 V AC, 9 mA, response time: 55 ms, 16 points/common, 20-point terminal block
		A1SX20EU	16 points, 200 to 240 V AC, 11 mA, response time: 55 ms, 16 points/common, 20-point terminal block, CE compliant
	DC (Positive/negative common)	A1SX71	32 points, 5/12/24 V DC, 1.2/3.3/7 mA, response time: 3 ms, 32 points/common, positive/negative common, 40-pin connector
		A1SX80	16 points, 12/24 V DC, 3/7 mA, response time: 10 ms, 16 points/common, positive/negative common, 20-point terminal block
		A1SX80-S1	16 points, 24 V DC, 7 mA, response time: 0.5 ms, 16 points/common, positive/negative common, 20-point terminal block, high-speed input
		A1SX80-S2	16 points, 24 V DC, 7 mA, response time: 10 ms, 16 points/common, positive/negative common, 20-point terminal block, for high leakage current sensor
		A1SX81	32 points, 12/24 V DC, 3/7 mA, response time: 10 ms, 32 points/common, positive/negative common, 37-pin D-sub connector
		A1SX81-S2	32 points, 24 V DC, 7 mA, response time: 10 ms, 32 points/common, positive/negative common, 37-pin D-sub connector, for high leakage current sensor
		A1SX82-S1	64 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common, positive/negative common, 40-pin connector, high-speed input
	AC/DC	A1SX30	16 points, 12 V AC/24 V AC/12 V DC/24 V DC, 4.2 mA (12 V AC, 12 V DC)/8.6 mA (24 V AC, 24 V DC), response time: 2.5 ms, 16 points/common, 20-point terminal block

AnS

I/O module

Product		Model	Outline
Output	Relay	A1SY10	16 points, 24 V DC/240 V AC, 2 A/point, 8 A/common, response time: 12 ms, 8 points/common, 20-point terminal block
		A1SY10EU	16 points, 24 V DC/120 V AC, 2 A/point, 8 A/common, response time: 12 ms, 8 points/common, 20-point terminal block, CE compliant
		A1SY14EU	12 points, 24 V DC/240 V AC, 2 A/point, 8 A/common, response time: 12 ms, 4 points/common, 20-point terminal block, CE compliant
		A1SY18A	8 points, 24 V DC/240 V AC, 2 A/point, 8 A/module, response time: 12 ms, all points independent, 20-point terminal block
		A1SY18AEU	8 points, 24 V DC/240 V AC, 2 A/point, response time: 12 ms, all points independent, 20-point terminal block, CE compliant
	Triac	A1SY22	16 points, 100/240 V AC, leakage at OFF: 1.5 mA (120 V AC), 3 mA (240 V AC), response time: 0.5 Hz + 1 ms, 8 points/common, 20-point terminal block, with fuse and surge suppressor
		A1SY28A	8 points, 100 to 240 V AC, leakage at OFF: 1.5 mA (120 V AC), 3 mA (240 V AC), response time: 0.5 Hz + 1 ms, all points independent, 20-point terminal block, with surge suppressor
	Dynamic output	A1S42Y	16/32/48/64 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 24-pin connector, with fuse, dynamic output
	Transistor (Sink)	A1SY40P	16 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 1 ms, 8 points/common, sink type, 20-point terminal block, with thermal/short-circuit protection and surge suppressor
		A1SY41P	32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 1 ms, 32 points/common, sink type, 40-pin connector, with thermal/short-circuit protection and surge suppressor
		A1SY42P	64 points, 2/24 V DC, leakage at OFF: 0.1 mA, response time: 1ms, 32 points/common, sink type, 40-pin connector, with thermal/short-circuit protection and surge suppressor
		A1SY50	16 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, sink type, 20-point terminal block, with fuse and surge suppressor
		A1SY60	16 points, 24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, sink type, 20-point terminal block, with fuse and surge suppressor
	Transistor (Source)	A1SY60E	16 points, 5/12/24 V DC, leakage at OFF: 0.1 mA, response time: 10 ms, 8 points/common, source type, 20-point terminal block, with fuse and surge suppressor
	Transistor	A1SY68A	8 points, 5/12/24/48 V DC, leakage at OFF: 0.1 mA, response time: 10 ms, all points independent, 20-point terminal block, with surge suppressor
	TTL CMOS	A1SY71	32 points, 5/12 V DC, response time: 1 ms, 32 points/common, sink type, 40-pin connector, with fuse
	Transistor (Source)	A1SY80	16 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, source type, 20-point terminal block, with fuse and surge suppressor
		A1SY81	32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, source type, 37-pin D-sub connector, with fuse and surge suppressor
		A1SY82	64 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, source type, 40-pin connector, with fuse and surge suppressor
I/O	DC/transistor	A1SH42	Input: 32 points, 12/24 V DC, 2/5 mA, response time: 10 ms, 32 points/common; output 32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, with fuse and surge suppressor; 40-pin connector
		A1SH42-S1	Input: 32 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common; output 32 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 32 points/common, with fuse and surge suppressor; 40-pin connector
		A1SH42P	Input: 32 points, 12/24 V DC, 2/5 mA, response time: 10 ms, 32 points/common, positive common; output: 32 points, 12/24 V DC leakage at OFF: 0.1 mA, response time: 1 ms, 32 points/common, sink type, with thermal/short-circuit protection and surge suppressor; 40-pin connector
		A1SH42P-S1	Input: 32 points, 24 V DC, 5 mA, response time: 0.3 ms, 32 points/common, positive common, high-speed input; output: 32 points, 12/24 V DC leakage at OFF: 0.1 mA, response time: 1 ms, 32 points/common, sink type, with thermal/short-circuit protection and surge suppressor; 40-pin connector
	DC/relay	A1SX48Y18	Input: 8 points, 24 V DC, 7 mA, response time: 10 ms, 8 points/common, positive common; output 8 points, 24 V DC/240 V AC, 2 A/point, 8 A/common, response time: 12 ms, 8 points/common; 20-point terminal block
	DC/transistor	A1SX48Y58	Input: 8 points, 24 V DC, 7 mA, response time: 10 ms, 8 points/common, positive common; output 8 points, 12/24 V DC, leakage at OFF: 0.1 mA, response time: 2 ms, 8 points/common, with fuse and surge suppressor; 20-point terminal block
Connector		A6CON1	40-pin connector, soldering type
		A6CON2	40-pin connector, crimp-contact type
		A6CON3	40-pin connector, IDC for flat cables
		A6CON4	40-pin connector, soldering type (bidirectional cable connectable)
		A6CON1E	37-pin D-sub connector, soldering type
		A6CON2E	37-pin D-sub connector, crimp-contact type
		A6CON3E	37-pin D-sub connector, IDC for flat cables

AnS

I/O module

Product		Model	Outline
Connector/terminal block conversion module		A6TBX36-E	For negative common input modules (standard type)
		A6TBX54-E	For negative common input modules (2-wire type)
		A6TBX70	For positive common input modules (3-wire type)
		A6TBX70-E	For negative common input modules (3-wire type)
		A6TBY36-E	For source type output modules (standard type)
		A6TBY54-E	For source type output modules (2-wire type)
		A6TBXY36	For positive common input modules and sink type output modules (standard type)
		A6TBXY54	For positive common input modules and sink type output modules (2-wire type)
Connector/terminal block conversion module	Cable	AC05TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 0.5 m
		AC10TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 1 m
		AC20TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 2 m
		AC30TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 3 m
		AC50TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 5 m
		AC80TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 8 m *Common power supply 0.5 A or lower
		AC100TB	For A6TBXY36, A6TBXY54, A6TBX70 (for positive common / sink type); 10 m *Common power supply 0.5 A or lower
		AC05TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 0.5 m
		AC10TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 1 m
		AC20TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 2 m
		AC30TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 3 m
		AC50TB-E	For A6TBX36-E, A6TBY36-E, A6TBX54-E, A6TBY54-E, A6TBX70-E (for negative common / source type); 5 m
Relay terminal module		A6TE2-16SRN	16 points, 24 V DC/240 VAC, ZA/point, 8 A/common, response time: 12 ms, 8 points/common, 40-pin connector
Relay terminal module	Cable	AC06TE	For A6TE2-16SRN, 0.6 m
		AC10TE	For A6TE2-16SRN, 1 m
		AC30TE	For A6TE2-16SRN, 3 m
		AC50TE	For A6TE2-16SRN, 5 m
		AC100TE	For A6TE2-16SRN, 10 m
Interrupt input		A1SI61	Interrupt input: 16 points, 12/24 V DC, 4/8 mA, response time: 0.2 ms, 16 points/common, 20-point terminal block
Dummy module		A1SG62	16/32/48/64-point dummy module
Conversion adapter	AnS conversion adapter	A1S-TA32	32-point IDC terminal block adapter, 0.5 mm² (AWG20)
		A1S-TA32-3	32-point IDC terminal block adapter, 0.3 mm² (AWG22)
		A1S-TA32-7	32-point IDC terminal block adapter, 0.75 mm² (AWG18)
		A1S-TB32	32-point terminal block adapter, 0.14 to 0.75 mm² (AWG26 to 18), for conversion to European type terminal block

Analog I/O module

Product		Model	Outline
Analog input	Voltage/ current input	A1S64AD	4 channels; input: -10 to 10 V DC, -20 to 20 mA; output (resolution): -4000 to 4000, -8000 to 8000, -12000 to 12000; conversion speed: 20 ms/channel; 20-point terminal block
		A1S68AD	8 channels; input: -10 to 10 V DC, 0 to 20 mA; output (resolution): 0 to 4000, -2000 to 2000; conversion speed: 0.5 ms/channel; 20-point terminal block
Analog output	Voltage/ current output	A1S62DA	2 channels; input (resolution): -4000 to 4000, 0 to 4000 / -8000 to 8000, 0 to 8000 / -12000 to 12000, 0 to 12000; output: -10 to 10 V DC, 0 to 20 mA; conversion speed: 25 ms/2 channels; 20-point terminal block
		A1S68DAV	8 channels, input (resolution): -2000 to 2000, output: -10 to 10 V DC, conversion speed: 4 ms/8 channels, 20-point terminal block
		A1S68DAI	8 channels, input (resolution): 0 to 4000, output: 4 to 20 mA DC, conversion speed: 4 ms/8 channels, 20-point terminal block
Analog I/O		A1S63ADA	Analog input: 2 channels; input: -10 to 10 V DC, -20 to 20 mA; analog output: 1 channel; output: -10 to 10 V DC, 0 to 20 mA; resolution: 1/4000, 1/8000, 1/12000; conversion speed: 3 ms/channel (at 1/12000); 20-point terminal block
		A1S66ADA	Analog input: 4 channels; analog output: 2 channels; analog I/O: -10 to 10 V DC, 0 to 20 mA; resolution: 1/4000; conversion speed: 400 μs/4 channels (analog input), 240 μs/2 channels (analog output); 20-point terminal block
Temperature input	Platinum RTD	A1S62RD3N	2 channels, 3-wire type platinum RTD (Pt100 [JIS C1604-1997, IEC 751-am2, JIS C1604-1989, DIN 43760-1980], JPt100 [JIS C1604-1981]), conversion speed: 40 ms/channel, 20-point terminal block
		A1S62RD4N	2 channels, 4-wire type platinum RTD (Pt100 [JIS C1604-1997, IEC 751-am2, JIS C1604-1989, DIN 43760-1980], JPt100 [JIS C1604-1981]), conversion speed: 40 ms/channel, 20-point terminal block
	Thermocouple	A1S68TD	8 channels, thermocouple (K, E, J, T, B, R, S), conversion speed: 400 ms/8 channels, 20-point terminal block
Temperature control		A1S64TCTRT	Standard control: 4 channels, heating-cooling control: 2 channels; thermocouple (K, J, T, B, S, E, R, N, U, L, PLII, W5Re/W26Re), platinum RTD (Pt100, JPt100); sampling cycle: 0.5 s/4 channels (standard control), 0.5 s/2 channels, (heating-cooling control); 20-point terminal block
		A1S64TCTRTBW	Standard control: 4 channels, heating-cooling control: 2 channels; thermocouple (K, J, T, B, S, E, R, N, U, L, PLII, W5Re/W26Re), platinum RTD (Pt100, JPt100); sampling cycle: 0.5 s/4 channels (standard control), 0.5 s/2 channels, (heating-cooling control); with heater disconneciton detection; 20-point terminal block

AnS

Pulse I/O and positioning module

Product		Model	Outline
High speed counter		A1SD61	1 channel; 50/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; comparison output: transistor (open collector), 12/24 V DC, 0.1 A/point, 0.8 A/common; 20-point terminal block
		A1SD62	2 channels; 100/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 20-point terminal block
		A1SD62E	2 channels; 100/10 kpps; count input signal: 5/12/24 V DC; external input: 5/12/24 V DC; conincidence output: transistor (source), 12/24 V DC, 0.1 A/point, 0.4 A/common; 20-point terminal block
		A1SD62D	2 channels; 200/10 kpps; count input signal: RS-422-A (differential line driver); external input: 5/12/24 V DC, coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 20-point terminal block
		A1SD62D-S1	2 channels; 200/10 kpps; count input signal: RS-422-A (differential line driver); external input: RS-422-A (differential line driver); coincidence output: transistor (sink), 12/24 V DC, 0.5 A/point, 2 A/common; 20-point terminal block
Positioning		A1SD70	1 axis, control unit: pulse, no. of positioning data: 1 piece/axis, 15-pin connector/9-pin connector, analog voltage output (-10 to 10 V DC)
Positioning	Open collector output/ Differential output	A1SD75P1-S3	1 axis; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; max. output pulse: 400 kpps (differential driver), 200 kpps (open collector); 36-pin connector
		A1SD75P2-S3	2 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; max. output pulse: 400 kpps (differential driver), 200 kpps (open collector); 36-pin connector
		A1SD75P3-S3	3 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; max. output pulse: 400 kpps (differential driver), 200 kpps (open collector); 36-pin connector
	SSCNET connection	A1SD75M1	1 axis; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; 36-pin connector; SSCNET connection
		A1SD75M2	2 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis; 36-pin connector; SSCNET connection
		A1SD75M3	3 axes; 2-axis linear interpolation/ 2-axis circular interpolation; control unit: pulse, mm, inch, degree; no. of positioning data: 600 pieces/axis 36-pin connector; SSCNET connection
	Cable	AD75C20SJ2	Cable for connecting AD75P□/A1SD75P□ positioning module and MR-J2□A, 2 m
		AD75C20SNJ2	Cable for connecting AJ65BT-D75P2-S3 positioning module and MR-J2/J2S, 2 m
		A1SD75-C01HA	Conversion cable for connecting A1SD75P□/M□ and peripheral devices
	Bracket	AD75CK	Cable clamp bracket for AD75, GOT
Position detection		A1S62LS	No. of position detection axes: 1, resolution: 4096 × 32 rotations to 409.6 × 320 rotations, no. of output channels: 16

Information module

Ethernet	A1SJ71E71N3-T	10BASE-T
Computer link	A1SJ71UC24-R2	RS-232: 1 channel, transmission speed: 0.3 to 19.2 kbps, computer link function
	A1SJ71UC24-R4	RS-422/485: 1 channel, transmission speed: 0.3 to 19.2 kbps, computer link function, multidrop link function
	A1SJ71UC24-PRF	RS-232: 1 channel, transmission speed: 0.3 to 19.2 kbps, computer link function, printer function
Intelligent communication	SW□IVD-AD51HP	Software package for QD51H, AD51H-S3, A1SD51S
Programmable controller fault detection	A1SS91	Programmable controller fault detection module, RUN output: 1 point, Error output: 1 point, General-purpose output: 3 points

Control network module

Product		Model	Outline
CC-Link		A1SJ61BT11	Master/local station, for AnSCPU
AS-i		A1SJ71AS92	AS-i system master module
MELSECNET/10	SI/QSI optical cable	A1SJ72QLP25	SI/QSI/H-PCF/broadband H-PCF optical cable, double loop, remote I/O network (remote I/O station)
	Coaxial cable	A1SJ72QLR25	3C-2V/5C-2V coaxial cable, double loop, remote I/O network (remote I/O station)
		A1SJ72QBR15	3C-2V/5C-2V coaxial cable, single bus, remote I/O network (remote I/O station)
	SI/QSI optical cable	A1SJ71LP21	SI/QSI/H-PCF/broadband H-PCF optical cable, double loop, PLC-to-PLC network (control/normal station)/remote I/O network (remote master station)
	Coaxial cable	A1SJ71LR21	3C-2V/5C-2V coaxial cable, double loop, PLC-to-PLC network (control/normal station)/remote I/O network (remote master station)
		A1SJ71BR11	3C-2V/5C-2V coaxial cable, single bus, PLC-to-PLC network (control/normal station)/remote I/O network (remote master station)
MELSECNET(II)		A1SJ71AP21	SI-200/250 optical cable, double loop, MELSECNET(II) master/local station
		A1SJ71AR21	3C-2V/5C-2V coaxial cable, double, loop MELSECNET(II) master/local station
MELSECNET/B		A1SJ71AT21B	Twisted pair cable, single bus, MELSECNET/B (master/local station)
MELSEC-I/O Link		A1SJ51T64	Twisted pair/cab-tire cable, single bus, MELSEC-I/O Link (master module)

Peripheral devices

ROM writer module	EPROM write adapter	A6WA-28P	Write adapter for EPROM 28-pin
Programming module	Cable	AC30R4	Cable for connecting CPU and A7PU/A7HGP/A6GPP, 3 m *A7HGP-SET/A6GPP-SET provided
		AC30R4-PUS	Cable for connecting CPU and A8UPU/A7PUS
Modem interface module		Q6TEL	Interface module to connect peripheral devices to the telephone line
External display		A6DU-B	LCD: 16 characters x 2 rows, for data access (CPU operation status, device monitoring/changes)

Peripheral Devices

Product	Model	Outline
Printer cable	AC30R2	RS-232C connection cable between A6GPP and printer, 3 m
Floppy disk	SW□-USER	1.4 MB (2HD) MS-DOS formatted

MELSOFT

MELSOFT GX Series

GX Developer	SW□D5C-GPPW-E	MELSEC programmable controller programming software
	SW□D5C-GPPW-EV	MELSEC programmable controller programming software (Upgrade)
GX Simulator	SW□D5C-LLT-E	MELSEC programmable controller simulation software
	SW□D5C-LLT-EV	MELSEC programmable controller simulation software (Upgrade)
GX Explorer	SW□D5C-EXP-E	Maintenance tool
GX Converter	SW□D5C-CNVW-E	Excel®/text data converter
GX Configurator-AP	SW□D5C-AD75P-E	MELSEC-A dedicated: positioning module setting/monitoring tool for AD75P/M
GX Configurator-CC	SW□D5C-J61P-E	MELSEC-A dedicated: CC-Link module setting/monitoring tool
GX RemoteService-I	SW□D5C-RAS-E	Remote access tool
GX Works	SW□D5C-GPPLLT-E	A set of three products: GX Developer, GX Simulator, GX Explorer

MELSOFT MX Series

MX Component	SW□D5C-ACT-E	ActiveX library for communication
MX Sheet	SW□D5C-SHEET-E	Excel® communication support tool
MX Works	SW□D5C-SHEETSET-E	A set of two products: MX Component, MX Sheet

Software

For IBM Compatible Personal computer	SW□IVD-MINIP-E	Software package for MELSECNET/MINI-S3
	SW□IVD-AD71P	Software package for positioning
	SW□IVD-AD75P-E	Positioning programming, for AD75

PC I/F Board

Product		Model	Outline
MELSECNET/H (10)	SI/QSI optical cable	Q80BD-J71LP21-25	PCI bus, Japanese/English OS compatible, SI/QSI optical cable, double loop, PLC-to-PLC network (control/normal station)
		Q80BD-J71LP21S-25	PCI bus, Japanese/English OS compatible, SI/QSI optical cable, double loop, PLC-to-PLC network (control/normal station), with external power supply function
	GI optical cable	Q80BD-J71LP21G	PCI bus, Japanese/English OS compatible, GI optical cable, double loop, PLC-to-PLC network (control/normal station)
	Coaxial cable	Q80BD-J71BR11	PCI bus, Japanese/English OS compatible, 3C-2V/5C-2V coaxial cable, single bus, PLC-to-PLC network (control/normal station)
CC-Link		Q80BD-J61BT11N	PCI bus, Japanese/English OS compatible, for master/local station, CC-Link Ver.2 compatible

A-A1S Module Conversion Adapter

Please refer to the MELSEC-A/QnA Series Transition Guide L(NA)08077 for details.

For I/O modules	A1ADP-XY	Enables to mount AnS/QnAS (Small Type) Series I/O module on an empty slot of A/QnA (Large type) Series base
For special function modules	A1ADP-SP	Enables to mount AnS/QnAS (Small Type) Series special function module on an empty slot of A/QnA (Large type) Series base

MELSECNET (II) - MELSECNET/10 Gateway Set*1

Please refer to the MELSEC-A/QnA Series Transition Guide L(NA)08077 for details.

For MELSECNET (II)-MELSECNET/10 gateway	Q6KT-NETGW-SS	A set of A1S35B, A1S61PN, Q2ASCPU, A1SJ71AP21, A1SJ71QLP21
	Q6KT-NETGW-RS	A set of A1S35B, A1S61PN, Q2ASCPU, A1SJ71AR21, A1SJ71QLP21
	Q6KT-NETGW-RB	A set of A1S35B, A1S61PN, Q2ASCPU, A1SJ71AR21, A1SJ71QBR11
For MELSECNET/B-MELSECNET/10 gateway	Q6KT-NETGW-TS	A set of A1S35B, A1S61PN, Q2ASCPU, A1SJ71AT21B, A1SJ71QLP21
	Q6KT-NETGW-TB	A set of A1S35B, A1S61PN, Q2ASCPU, A1SJ71AT21B, A1SJ71QBR11

MELSECNET(II), MELSECNET/B Local Station Data Link Module

Please refer to the MELSEC-A/QnA Series Transition Guide L(NA)08077 for details.

MELSECNET(II), MELSECNET/B local station data link module	A1SJ71AP23Q	MELSECNET (II) local station data link module for SI optical cable
	A1SJ71AR23Q	MELSECNET (II) local station data link module for coaxial cable
	A1SJ71AT23BQ	MELSECNET/B local station data link module for shielded twisted pair cable

*1 Model name reading method Q6KT-NETGW-□□ (1)(2)

(1) Network type: MELSECNET (II)
S: SI optical cable (Double loop)
R: Coaxial cable (Double loop)
T: Twisted pair cable (Bus)

(2) Network type: MELSECNET/10
S: SI optical cable (Double loop)
B: Coaxial cable (Bus)

MEMO

Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001(standards for quality assurance management systems)

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- The products have been manufactured under strict quality control. However, when installing the products where major accidents or losses could occur if the products fail, install appropriate backup or fail-safe functions in the system.

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