

KOGANEI



CC-Link-Compliant

I/O Terminal YS9

User's Manual

Ver.1.0

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2 Revision History

2 Revision History

Date of revision	Description of revision
June 30, 2026	First Printing



CAUTION

With regard to the handling of and precautions for solenoid valves, be sure to read the Safety Precautions and Handling Instructions and General Precautions in the catalog on the Koganei website before use.

3 Safety Precautions (I/O Terminal)

Please read these Safety Precautions carefully before selecting a model and using the product in question, and make sure to use it properly.

The following precautions are intended to ensure safe and proper product usage and to prevent any harm coming to you, other people, or property.

Be sure to observe them in conjunction with the ISO 4414 (Pneumatic fluid power - General rules and safety requirements for systems and their components) and JIS B 8370 (General rules for pneumatic systems) safety regulations.

The instructions are divided into "Danger," "Warning," "Caution," and "Request" categories in accordance with the degree of danger and impairment

 DANGER	Indicates a clear, predictable hazard. Failure to avoid this hazard may result in death or serious injury. Damage or destruction of property may also occur.
 WARNING	Indicates a hazard that, while not an immediate threat, may become a threat under certain circumstances. Failure to avoid this hazard may result in death or serious injury. Damage or destruction of property may also occur.
 CAUTION	Indicates a hazard that, while not an immediate threat, may become a threat under certain circumstances. Failure to avoid this hazard may result in light or moderate injury. Damage or destruction of property may also occur.
 REQUEST	While there is no potential for injury, this should be observed to use the product properly.

■ This product was designed and manufactured to be a component for general industrial machinery.

- When selecting and handling the equipment, be sure to have the system designer, or someone in charge with sufficient knowledge and experience, read the "Safety Precautions, Catalog, User's Manual, and other materials before handling the equipment. Handling it improperly is dangerous.
- After reading the catalog, user manual, and other materials, be sure to keep them someplace where they can be read at any time by whoever is using the product.
- If the product is transferred or loaned, be sure to include the catalog, user's manual, and other materials in a conspicuous spot on the product so that the new owner will know how to use the product safely and properly.
- The hazard, warning, and caution items listed in this Safety Precautions section do not cover all cases. Please read the catalog and user manual carefully and always prioritize safety



DANGER

Intended Uses

- Do not use this product for the following applications.
 1. Medical equipment related to the maintenance, management, or otherwise of human life and the human body
 2. Mechanisms and mechanical devices intended for moving or transporting people.
 3. Important safety components for machinery

The product in question was not planned or designed for applications requiring a high degree of safety. Such applications may result in loss of human life

Installation

- When installing the product, be sure it is securely held and fastened (including the workpiece). Injury may occur if the product falls over, drops, or operates in an abnormal manner.
- While the installation position is left up to the user, do not directly subject the main unit to strong shocks or vibrations.
- Do not use the product in the presence of hazardous materials such as ignitable or flammable materials. This product is not explosion-proof. It is possible for it to ignite either spontaneously or with an ignition source.

Wiring

- Be sure to turn off the power when wiring, installing, or inspecting the product. Failure to do so may result in accidents, electric shock, or malfunctions.
- Wire the product properly as indicated in this manual. Thoroughly check the configuration of the wiring, switches, and so on before turning on the power.
- For the module's input and output power supplies, use a stabilized DC power supply within the rated range that is insulated from AC currents. Uninsulated power supplies may result in electric shock. An unregulated power supply may cause the peak value to exceed the rated value, damage the module, or cause its accuracy to deteriorate.

Disassembly and Modification

- Never modify the product. Doing so may result in injury, electric shock, or fire due to abnormal operation.
- Do not disassemble, reassemble, or repair the product in an inappropriate manner that affects its fundamental structure, performance, or functions. Doing so may result in injury, electric shock, or fire.

During Operation

- Do not touch or place your hand or body near the product while it is in operation. In addition, do not adjust any built-in or attached mechanisms (e.g. attaching/detaching modules, wiring connectors, etc.) while the product is in operation. Doing so may result in injury.

WARNING

How to Use

- Do not exceed the scope of the product specifications when using the product.
Exceeding the scope of the product specifications may cause it to malfunction, stop functioning, or sustain damage. It may also cause a significant decrease in the service life of the product.
- Do not throw the product into fire. The product may explode or generate toxic gases.
- Do not climb onto the product, use it as a foothold, or place objects onto it. Doing so may result in falls, injury due to the product falling or tipping over, product damage, malfunctions due to damage, unpredictable movement, and so on.

Installation

- Be sure to turn off the power when installing modules. Failure to turn off the power may result in module malfunctions or damage.
- Do not drop the product or subject it to abnormal vibrations or shock. Doing so may result in product failure or burnout

Wiring

- Be sure to turn off the power when performing wiring work. Failure to do so may result in electric shock.
- After wiring is completed, confirm that there are no errors in the wiring.
- Do not use the same wiring route as power lines or high-voltage lines. Malfunctions may occur due to noise/surge interference in the signal line from the power lines or high-voltage lines.
- Do not connect the power supply in the reverse direction. Doing so may result in malfunction or burnout.
- Perform wiring for the input line and output line separately. Failure to do so may result in malfunctions.
- Do not subject the cables to repeated bending, pulling, pressure from heavy objects, or applications of force.
Wiring that subjects cables to repeated bending stress or tensile force may result in the cables snapping.
- Install noise filters or other adequate noise suppression measures when incorporating the product into equipment or devices. Malfunctions may occur due to noise interference.
- The frame ground should be as dedicated and as close to the module as possible. Too long of a distance may result in malfunctions due to noise interference.

While Supplying Power

- Do not connect or disconnect connectors with the power on. In addition, do not apply unnecessary stress on the connectors. Doing so may result in injury, equipment damage, or electric shock due to equipment malfunctions
- Do not touch the terminals while power is being supplied. Doing so may cause result in electric shock.
- The input voltage and current must fall within the specified range. Use of a voltage or current in excess of the rated value may result in malfunctions or fire.
- Do not short-circuit the load. Doing so may result in malfunction or burnout.

Fail-safe

- Output may remain on or off due to welding or burnout of the output relays, destruction of the output transistors, or other factors. If this occurs, take external measures to ensure that the system operates on the safe side.
- When a communication failure occurs or an abnormality is detected in the internal state, output will occur in accordance with the settings. If this occurs, take external measures to ensure that the system operates on the safe side.
- When an abnormality is detected, output will occur in accordance with the settings, but the output will be turned off when the unit power supply (for control and input) is turned off, even if the output power supply is turned on. If this occurs, take external measures to ensure that the system operates on the safe side.

CAUTION

How to Use

- The input and output power supplies to the module should be separate power supplies. Operation cannot be guaranteed if they are operated from the same power supply.
- For the input and output power supplies to the module, make 0V the standard. Failure to do so may result in malfunctions.
- When increasing or decreasing the number of modules, do not exceed 2A of input or output supply power. Ensure that the sum of the current consumed by each module, the sensor supply current, and the load current does not exceed 2A. Exceeding 2A of current may result in malfunction or burnout.
- Use products with built-in surge absorbing elements for loads such as relays, bulbs, and lamps when directly driving loads that generate surge voltages. Failure to do so may result in malfunctions.

Installation

- Do not install or store the product in the following types of environments. Doing so may cause burnout, a cease in operation, or malfunctions.
 1. Coastal areas; locations exposed to direct sunlight (ultraviolet rays); or locations near ozone-generating devices, such as mercury lamps
 2. Locations where ambient temperature or relative humidity exceed the operating range
 3. Locations subject to rapid temperature changes and condensation
 4. Locations where corrosive or flammable gases are present
 5. Locations where there is a lot of dust, dirt, salt, or iron powder
 6. Locations exposed to splashes of water, oil, chemicals, etc.
 7. Locations where the main unit is exposed to direct vibrations or shock
- When using the product in the following types of locations, take sufficient measures to shield it.
 1. Near equipment that generates powerful high-frequency noise
 2. Locations where noise is generated by static electricity, etc.
 3. Locations where strong electric or magnetic fields are generated
 4. Locations where there is a risk of radiation exposure
 5. Locations with power lines nearby
- Discharge static electricity from your body by touching a grounded metal object before touching the product.
- Be sure to ground the product during installation.

Installation

- When attaching a module, be careful not to touch or bump against the connector terminals. If a module is installed and energized while the connector terminals are deformed, malfunctions may result due to poor contact.
- Tighten the screws at the connector with the torque specified in this manual. Loose screws may cause malfunctions.
- Please secure a working space for attaching the product. Failure to secure a working space will prevent daily inspections and maintenance, leading to the equipment stopping and product damage.

While Supplying Power

- Pay attention to the inrush current when the power is turned on. Depending on the connected load, the initial charging current may trigger the overcurrent protection function, causing the module to malfunction.

 REQUEST**EMC Commands**

- While this product complies with EMC standards (EN61000-6-2, EN55011), this is to ensure that machines and equipment incorporating the product can comply with EMC standards, and does not guarantee that all equipment incorporating the product will meet the essential requirements of the EMC standards. Final confirmation of conformity to EMC standards should be performed by the customer themselves.

General

- If you intend to use the product under conditions or in environments not described in the catalog, user's manual, and other materials, or if you intend to use the products for applications where safety is especially essential, such as air navigation facilities, combustion equipment, entertainment equipment, safety equipment, or other applications where a significant impact on human life or property is likely, please leave sufficient leeway for ratings and performance when using the product and implement fail-safes and other safety measures. Please be sure to consult with one of our sales representatives.
- This product is intended for use in Japan. If using the product overseas, it is necessary to check the safety standards of the country in question. Please contact the nearest sales office.
- Unused or obsolete products and consumables should be appropriately disposed of as industrial waste.
- Third-party software is embedded in this product. Refer to <https://official.koganei.co.jp/common/html/3rd-party-license.html> for information about licenses and copyrights related to this software.
- For hazards, warnings, and precautions not listed in this Safety Precautions section, refer to Safety Precautions (shared between air valves and other control equipment and between thermal refining, auxiliary, and vacuum equipment) in the web catalog (<https://official.en.koganei.co.jp/product/safe>).
- For product inquiries, please contact our nearest sales office or Overseas Group. The address and telephone number are shown at the end of this document.

 Other

- Please observe the following items.

1. When assembling a pneumatic system using this

product, use genuine parts or compliant parts (recommended parts). When performing maintenance and servicing, use genuine parts or compliant parts (recommended parts). Observe the designated techniques and methods.

2. Do not disassemble or reassemble the product in an inappropriate manner that affects its fundamental structure, performance, or functions.

We assume no responsibility for any failure to observe all safety precautions.

 IP Rating (Dust and Water Protection)

- This product is designed with a dustproof and waterproof rating of IP65/67. However, please observe the following precautions during use:
 1. This product is not suitable for underwater use.
 2. When used in environments where the product is continuously exposed to dust or water, implement appropriate protective measures such as using a protective cover.
 3. Avoid use in environments with high water pressure, such as high-pressure washing.
 4. For use in environments where the product may be exposed to substances other than water (e.g., organic solvents, cutting oil, cleaning fluids, or chemicals), consult your nearest KOGANEI sales office in advance.
 5. Always attach a waterproof cap (YS9Z-SA12) to unused connectors. Proper use of the waterproof cap is required to maintain the IP65/67 protection rating.

Warranty and Disclaimers**1. Warranty Period**

The warranty period for our products is one year after delivery. *Some products have a 2-year warranty. Please contact our nearest sales office or Overseas Group for details.

2. Warranty Scope and Disclaimers

- (1) If a product purchased from us or an authorized dealer or distributor fails through fault of our own within the warranty period, we will repair or replace the product free of charge. Even when within the warranty period, some products have a specified lifetime in terms of number of operations and other aspects, so confirm with the nearest sales office or Overseas Group.
- (2) Our product warranties are for the products themselves. Therefore, we are not liable for any incidental damages (e.g. costs incurred for repair or replacement of the product) resulting from product failure or a deterioration in its functions or performance.
- (3) We shall not be liable for any damage induced by or resulting from failures of our products, any deterioration in our products' function or performance, or any damage caused to other equipment due to said failures or deterioration.
- (4) We shall not be liable for any damage that results from use or storage of our products beyond the scope of the product specifications described in our catalogs and instruction manuals, or from actions other than those described in the precautions for installation, installation, adjustment, maintenance, and so on.
- (5) We shall not be liable for any damage caused by fire, natural disasters, the actions of a third party, or intentional or negligent actions of a customer that are not the responsibility of our company.

4 Glossary

Terminology	Description
Number of Stations	The total number of stations occupied by all slave devices connected to the CC-Link system.
Station Number	A number used to identify each station connected to the CC-Link system. The master station is assigned "0", and slave stations are assigned numbers from 1 to 64.
Terminating resistor	A resistor installed at both ends of the wiring when devices are connected to a fieldbus. It prevents signal reflection at the ends of the line and stabilizes communication.
Number of occupied stations	The number of stations used on the network by a slave station. Depending on the slave specifications, it can be set from 1 to 4 stations.
Remote device station	A slave station that cyclically transmits I/O data (bit units and word units) to the CC-Link master station.
Non-volatile memory	A storage device that retains data even when the power is turned off.
Communication module	A module that exchanges I/O data with a PLC.
I/O expansion module	A generic term for components that extend the input/output functions of a communication module.
Unit	A collection of communication modules and I/O expansion modules connected to a communication module.

5 Overview

I/O terminals are devices that can be connected to various open field networks to reduce the amount of wiring and enable distributed installation of input/output devices. Up to 20 F10 and F15 series manifold solenoid valves (32 control points) and up to 8 I/O expansion modules can be connected



6 Specifications

This section describes the specifications for the communication modules and I/O expansion modules that comprise the I/O terminal.

6-1 Common Specifications

Operating temperature range	5 to 50 °C
Operating humidity range	35 to 85% RH (non-condensation)
Operating atmosphere	No corrosive gases and no excessive dust
Vibration resistance	49.0m/s ²
Shock resistance	98.1m/s ²
Dielectric strength	1000 VAC for 1 minute (between all external terminals and the case)
Noise resistance	IEC61000-4-4 compliant, level 3
Insulation resistance	10 MΩ or more (between all external terminals and the case, using a 500 VDC insulation resistance tester)
Standard	CE marking compliant

6-2 Communication Module

This section describes the specifications, component names, and functions of the CC-Link compatible communication module **YS9-B3**.

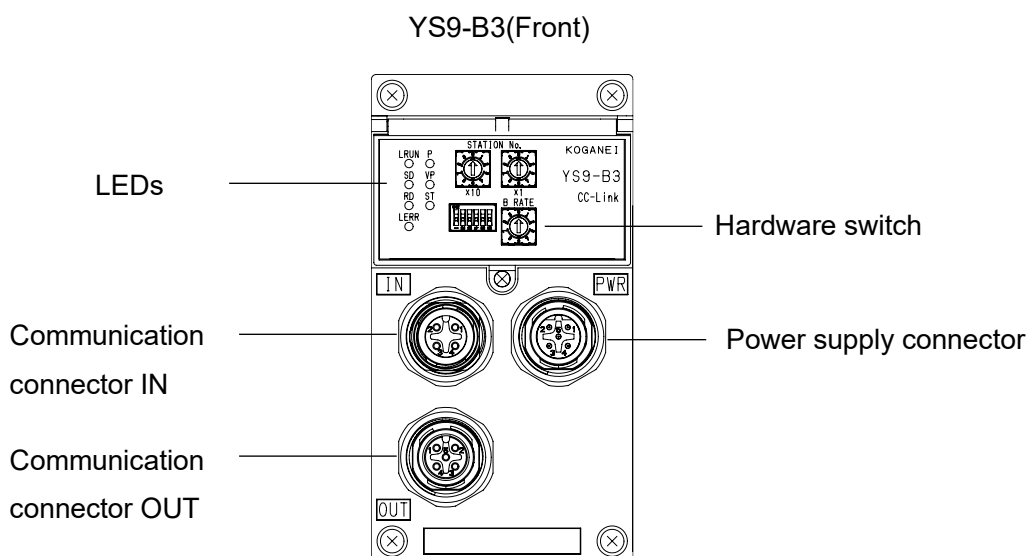
6-2-1 Specifications

General Specifications	Model	YS9-B3					
	Internal current consumption	Power Supply for Unit : 100mA or less Power Supply for Outputs : 10mA or less (excluding I/O modules and solenoid valve supply current)					
	Input power supply	DC24V $\pm$ 10%, 2A					
	Output power supply	DC24V $\pm$ 10%, 2A					
	Protection rating	IP65/67					
	M12 connector tightening torque	0.4N $\cdot$ m					
	Mass	200g					
CC-Link Communication	Version	Ver1.10*					
	Communication method	Broadcast polling method					
	Synchronization method	Frame synchronization					
	Transmission path	Bus format (EIA RS485 Compatible)					
	Communication speed	156k / 625k / 2.5M / 5M / 10Mbps(Selectable via rotary switch)					
	Station type	Remote device station					
	Number of occupied stations	1 / 2 / 3 / 4 stations (Selectable via DIP switch)					
	Station number setting	1 station: 1–64 2 stations: 1–63 3 stations: 1–62 4 stations: 1–61 (Selectable via rotary switch)					
	Hold/Clear	Selectable via DIP switch					
	Indicators	L RUN,SD,RD,L ERR					
	Transmission distance	communication speed bps	156k	625k	2.5M	5M	10M
		total cable length m	1200	1200	400	160	100
	Communication cable	CC-Link dedicated cable (Ver. 1.10 compliant)					
	Terminating resistor	110 Ω (switch selectable) 130 Ω when using high-performance CC-Link cable					

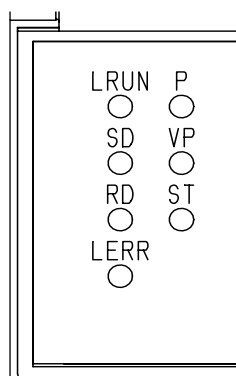
*Units compliant with Ver. 1.10 can be connected to a Ver. 2.0 compatible master.

Maintain a cable length of at least **20 cm between stations**.

6-2-2 Major Parts and Functions



LED Displays



Name	Description
P	Indicates the supply status of the control power.
VP	Indicates the supply status of the valve output power.
ST	Indicates module status
L RUN	Indicates CC-Link data link status
RD	Indicates CC-Link receive status
SD	Indicates CC-Link transmit status
L ERR	Indicates CC-Link error status

Communication Module Status

Name	Status	Color	Details
P	☐ Not lit	-	No unit power supplied
	☒ Lit	Green	Unit power supplied
VP	☐ Not lit	-	No valve/output power supplied
	☒ Lit	Green	Output operation enabled
ST	☐ Not lit	-	No unit power supplied
	☒ Lit	Orange	Initialization in progress
	☒ Lit	Green	Normal link with master station
	☒ Flashing	Green	Not linked with master station
	☒ Flashing	Orange	Recoverable error
	☒ Lit	Red	Non-recoverable error

※For error handling, refer to Section 14 “Troubleshooting”.

CC-Link Status

LED Combination				Description
L RUN	L ERR	SD	RD	
■	▣	▣	■	Linked normally, but CRC error due to noise, etc. The baud rate or station number setting has been changed from the values set at power-on.
■	▣	□	■	CRC error in received data, cannot respond
■	□	▣	■	Normal communication
■	□	□	■	No data addressed to this station received
□	▣	▣	■	Responding but refresh reception CRC error
□	▣	□	■	CRC error in received data addressed to this station
□	□	▣	■	Communication initialization failure / station number mismatch
□	□	□	■	No data received or affected by noise
□	□	□	□	No data received (disconnection or power OFF)
□	■	□	■	Station number setting out of range (65–99)
□	■	□	□	Baud rate setting out of range (5–9)

※For error handling, refer to Section 14 “Troubleshooting”.

Hardware Switches

Loosen the display cover screws before setting switches.

※If water droplets are present, wipe them off before opening the cover.

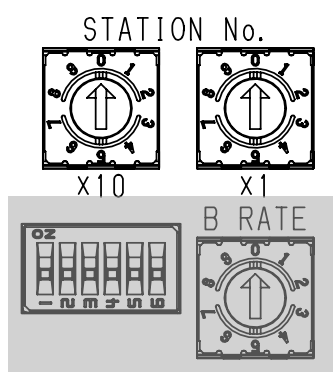
Avoid contact with the circuit board using metal tools.

After setting, tighten the cover screws. (Tightening torque: **0.088 N·m**)

Rotary Switches

· Station Number Setting

Sets the station number for CC-Link communication



StationNo. X10	StationNo. X1	Station number
0	0	Error (factory default)
0	1	1
0	2	2
...	...	...
6	3	63
6	4	64
6	5	Error
...	...	Error
9	9	Error

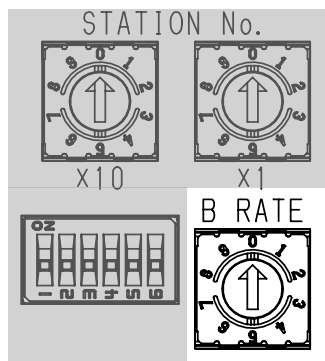
※The configurable range of station numbers varies depending on the number of occupied stations.

Number of Occupied Stations	Configurable Station Number Range
1	1 ~ 64
2	1 ~ 63
3	1 ~ 62
4	1 ~ 61

· Baud Rate Setting

Sets the communication speed for CC-Link communication.

The setting must match the master station.



setting value	Communication Speed
0	156 kbps (factory default)
1	625 kbps
2	2.5 Mbps
3	5 Mbps
4	10Mbps
5 ~ 9	Error

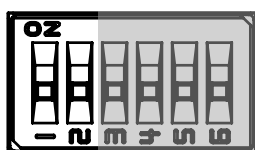
DIP Switch

· Number of Occupied Stations

Sets the number of stations occupied by this station.

The number of I/O points available to this station varies depending on this setting.

(For details, refer to Section 11 "I/O Data Allocation.")

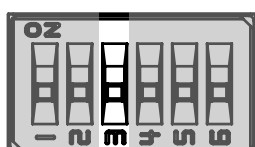


Number of Occupied Stations	DIP SW1	DIP SW2
1	OFF (factory default)	OFF (factory default)
2	ON	OFF
3	OFF	ON
4	ON	ON

※Applied at power-on

· Hold/Clear Setting

Sets whether the output state is held or cleared when a communication error occurs.

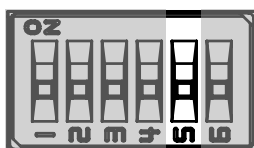


Mode	DIP SW3
Clear	OFF (factory default)
Hold	ON

※Applied at power-on

• Termination Setting

Sets whether this station is configured as the terminal station.



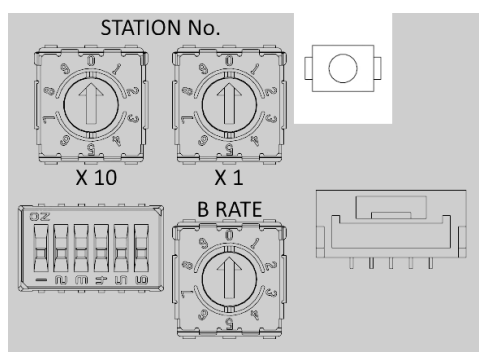
Mode	DIP SW5
Intermediate Station	OFF (factory default)
End Station	ON

※When set to ON, a **110 Ω termination resistor** is internally connected between the CC-Link communication lines DA and DB.

When using a high-performance CC-Link dedicated cable or in T-branch wiring configurations, set this to OFF and connect the termination resistor externally.

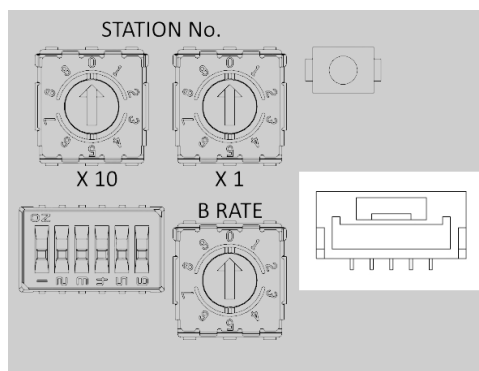
Reset Switch

Press and hold for **4 seconds or more** while powered to restore factory settings.



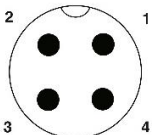
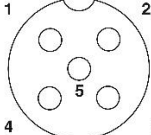
Communication Port (for Support Software)

Used to connect to the support software. Connect the dedicated communication cable : **IBM2-H1**.



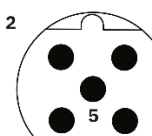
Connector Pin Assignment

CC-Link Connector

Connector Type		Pin No.	Signal name	Wire color
CC-Link IN	CC-Link OUT			
 M12 plug A-coded	 M12 socket A-coded	1	SLD	Shield
		2	DB	White
		3	DG	Yellow
		4	DA	Blue
		5	N.C	-

When the CC-Link OUT connector is not in use, be sure to attach a waterproof cap (YS9Z-SA12).
(Tightening torque: 0.4 N·m)

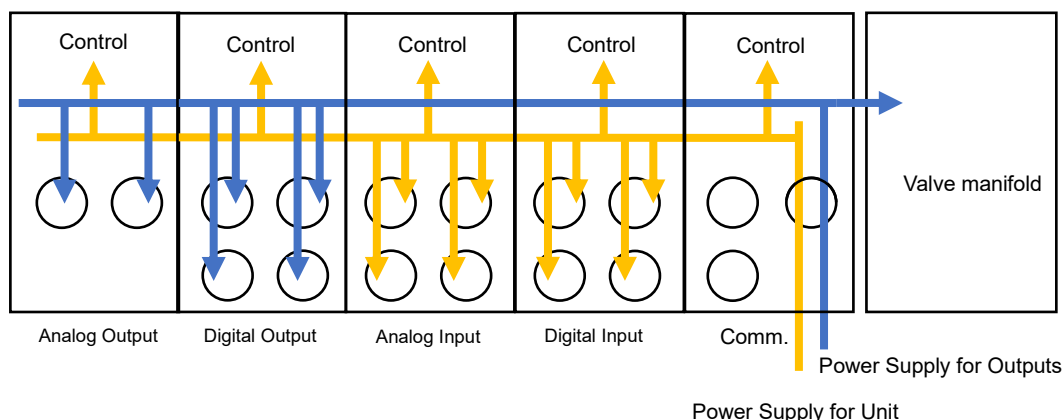
Power Supply Connector

Connector Type	Pin No.	Signal name	Wire color*
 M12 plug B-coded	1	24V (Unit)	Brown
	2	0V (Unit)	White
	3	24V (Output)	Blue
	4	0V (Output)	Black
	5	F.G.	Gray

※ When using KOGANEI power supply cable (YS9Z-KP-□).

Power Supply for Unit : Supplies power to the communication module, I/O expansion modules, and the channels of the input module.

Power Supply for Outputs : Supplies power to the valve and the channels of the output module.



6-2-3 Connectable I/O Expansion Modules

Up to 8 expansion I/O modules can be connected to the communication module.

The types and maximum number of connectable modules are shown below:

Type	Model	Max. Number of Modules
Digital Input	YS9-D8N	8
	YS9-D8N-P	
Analog Input	YS9-A4N	4
Digital Output	YS9-D8S	8
	YS9-D8S-M	
Analog Output	YS9-A2S	8

※If 9 or more I/O expansion modules are connected and the power is turned on, the communication module will not establish communication with the PLC.

Ensure that the number of connected modules does not exceed the specified limit.

6-3 Digital Input Module

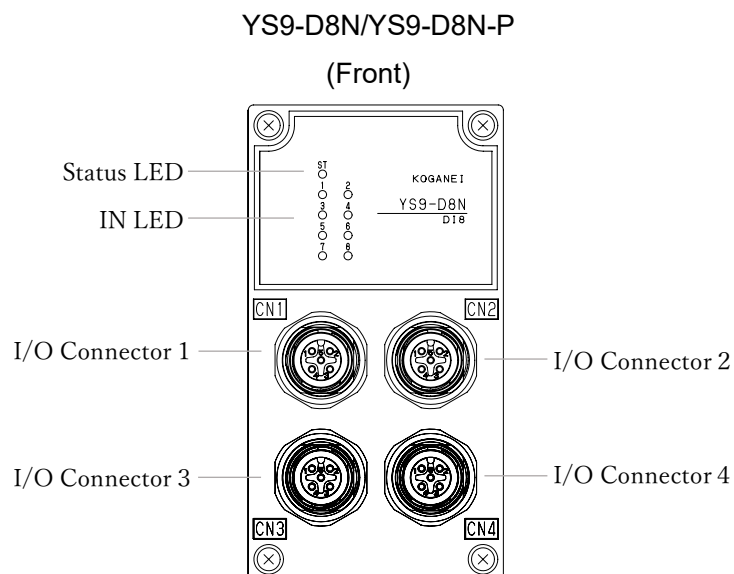
This section describes the specifications and functions of the I/O expansion modules
YS9-D8N / YS9-D8N-P.

6-3-1 Specifications

Model	YS9-D8N	YS9-D8N-P
Input specifications	NPN	PNP
Number of input points	8 points	
Max. sensor supply current	1A / module	
Rated input current	7.5mA or less(at 26.4V) ※per point	
ON voltage/ON current	15V or more / 3.9mA or more (When NPN input occurs, between input terminal and +24V) (When PNP input occurs, between input terminal and 0V)	
OFF voltage/OFF current	5V or less/ 1mA or less (When NPN input occurs, between input terminal and +24V) (When PNP input occurs, between input terminal and 0V)	
Input resistance	3.6KΩ	
Sampling period	100 μs	
Protection function	Overcurrent detection	
Internal current consumption	Power Supply for Unit : 40mA or less Power Supply for Outputs : — (excluding sensor supply current)	
Protection rating	IP65/67	
M12 connector tightening torque	0.4N · m	
Mass	180g	

※When an overcurrent is detected, the input is forcibly turned off and the connection to the PLC is disconnected. Even if the cause of the overcurrent is addressed, the unit will not automatically recover. Disconnect the power supply, address the cause, and then turn it on again.

6-3-2 Major Parts and Functions



LED Displays

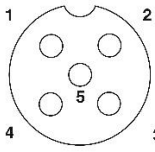
Status LED

Name	Status	Color	Details
ST	☐ Not lit	-	No unit power supplied
	☒ Lit	Orange	Initialization in progress
	☒ Lit	Green	Input data can be transmitted to master
	☒ Flashing	Green	Not linked with master
	☒ Flashing	Orange	Communication settings incomplete
	☒ Lit	Red	Non recoverable error

IN LED

Name	Status	Color	Details
1 ~ 8	☐ Not lit	-	No unit power supplied / Input OFF
	☒ Lit	Green	Input ON

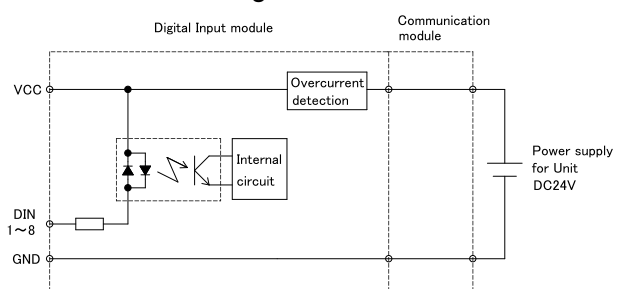
Pin assignment

Connector type	Connector1		Connector2		Connector3		Connector4	
	Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name	Pin No.	Signal Name
 M12 socket A-coded	1	VCC	1	VCC	1	VCC	1	VCC
	2	DIN2	2	DIN4	2	DIN6	2	DIN8
	3	GND	3	GND	3	GND	3	GND
	4	DIN1	4	DIN3	4	DIN5	4	DIN7
	5	F.G.	5	F.G.	5	F.G.	5	F.G.

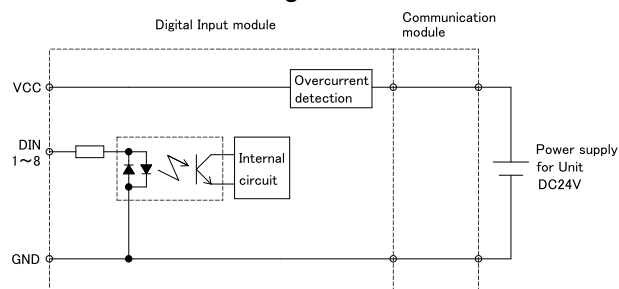
※VCC is shared internally.

※GND is shared internally.

YS9-D8N circuit diagram



YS9-D8N-P circuit diagram



6-4 Analog Input Module

This section describes the specifications and functions of the I/O expansion module YS9-A4N.

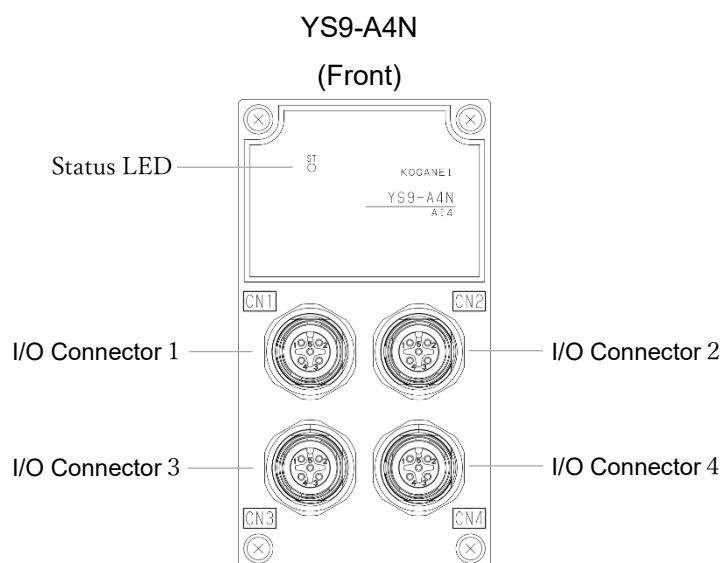
6-4-1 Specifications

Model	YS9-A4N	
Input mode	Voltage	Current
Number of input points	4 points	
Max. sensor supply current	1A / module	
Rated input voltage / current	15V	40mA
Input impedance	1M Ω	250 Ω
Input signal range※1	0-5V / 0-10V	0-20 mA
Resolution	12bit	
Conversion accuracy (25°C)	$\pm 0.5\%$ F.S.	
Sampling period	1ms	
Protection function	Overcurrent detection※2	
Internal current consumption	Power Supply for Unit: 60mA or less Power Supply for Outputs: — (excluding sensor supply current)	
Protection rating	IP65/67	
M12 connector tightening torque	0.4N · m	
Mass	180g	

※1 The input range can be configured from the Support Software. For configuration procedures, refer to the HV054 YS9 Support Software User's Manual.

※2 When an overcurrent is detected, the input is forcibly turned off and the connection to the PLC is disconnected. The unit does not automatically recover even after the cause of the overcurrent is removed. Disconnect the power, remove the cause, and then turn the power on again.

6-4-2 Major Parts and Functions



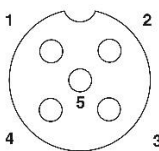
LED Displays

Status LED

Name	Status	Color	Details
ST	☐ Not lit	-	No unit power supplied
	☒ Lit	Orange	Initialization in progress
	☒ Lit	Green	Input data can be transmitted to master
	☒ Flashing	Green	Not linked with master
	☒ Flashing	Orange	Communication settings incomplete
	☒ Lit	Red	Non recoverable error

Pin Assignment / Internal Circuit

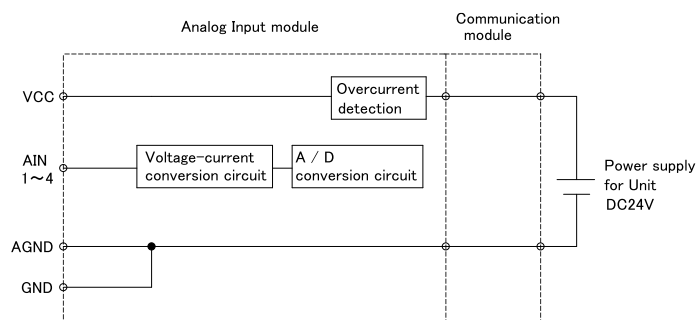
YS9-A4N Pin Assignment

Connector Type	Connector 1		Connector 2		Connector 3		Connector 4	
	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
 M12 socket A-coded	1	VCC	1	VCC	1	VCC	1	VCC
	2	AIN1	2	AIN2	2	AIN3	2	AIN4
	3	GND	3	GND	3	GND	3	GND
	4	AGND1	4	AGND2	4	AGND3	4	AGND4
	5	F.G.	5	F.G.	5	F.G.	5	F.G.

※VCC is shared internally.

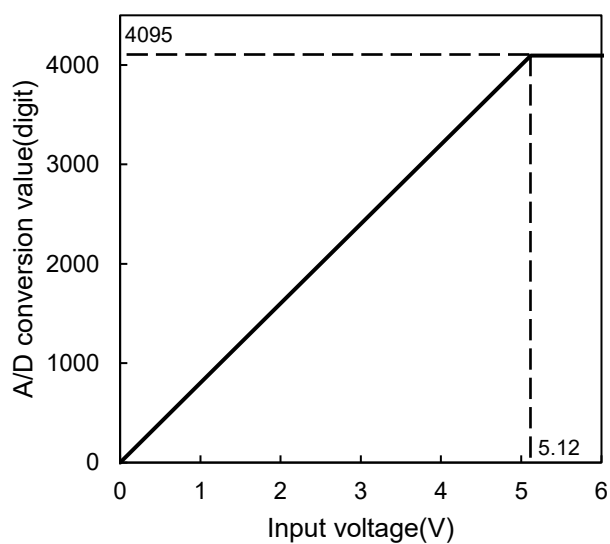
※AGND and GND are shared internally.

YS9-A4N Circuit Diagram



6-4-3 A/D Conversion Table

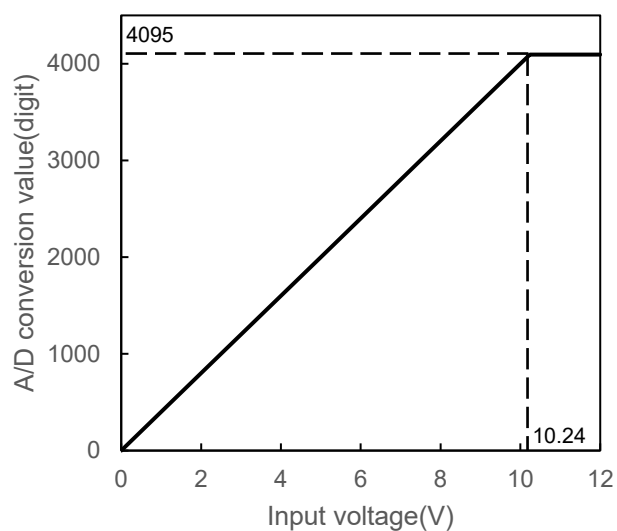
Input Range 0-5V



Input voltage (V)	A/D conversion value
0	0
0.5	400
1	800
1.5	1200
2	1600
2.5	2000
3	2400
3.5	2800
4	3200
4.5	3600
5	4000

※For inputs of 5.12V or more, the A/D conversion value is 4095.

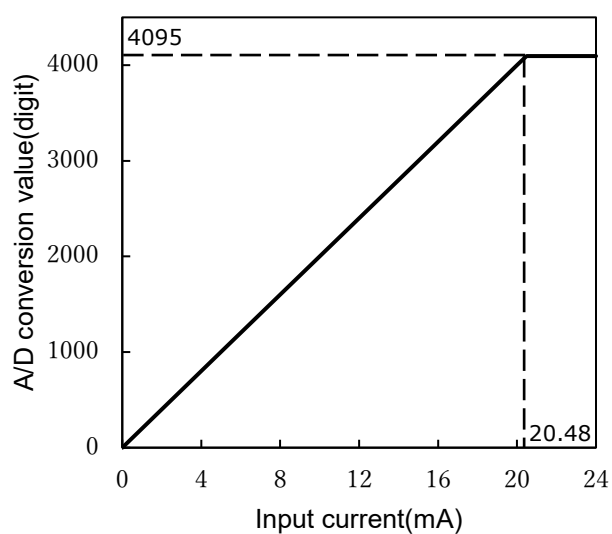
Input Range 0-10V



Input voltage (V)	A/D conversion value
0	0
1	400
2	800
3	1200
4	1600
5	2000
6	2400
7	2800
8	3200
9	3600
10	4000

※For inputs of 10.24V or more, the A/D conversion value is 4095.

Input Range 0-20mA



Input current (mA)	A/D conversion value
0	0
2	400
4	800
6	1200
8	1600
10	2000
12	2400
14	2800
16	3200
18	3600
20	4000

※For inputs of 20.48mA or more, the A/D conversion value is 4095.

6-5 Digital Output Module

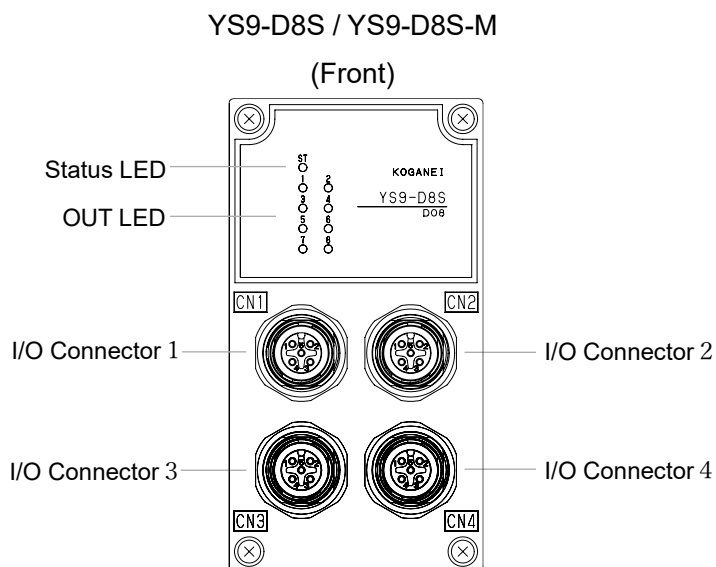
This section describes the specifications and functions of the I/O expansion modules YS9-D8S / YS9-D8S-M.

6-5-1 Specifications

Model	YS9-D8S	YS9-D8S-M
Output specifications	Sink	Source
Number of output points	8 points	
Max. load current	0.5A / channel, 1A / module	
Protection function	Overcurrent detection, output short-circuit protection	
Internal current consumption	Power Supply for Unit: 40mA or less Power Supply for Outputs: 30mA or less (excluding sensor supply current)	
Protection rating	IP65/67	
M12 connector tightening torque	0.4N · m	
Mass	180g	

※When an overcurrent is detected, the output is forcibly turned off and the connection to the PLC is disconnected. The unit does not automatically recover even after the cause of the overcurrent is removed. Disconnect the power, remove the cause, and then turn the power on again.

6-5-2 Major Parts and Functions



LED Displays

Status LED

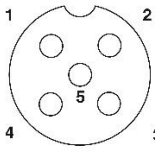
Name	Status	Color	Details
ST	☐ Not lit	-	No unit power supplied
	☒ Lit	Orange	Initialization in progress
	☒ Lit	Green	Input data can be transmitted to master
	☒ Flashing	Green	Not linked with master
	☒ Flashing	Orange	Communication settings incomplete
	☒ Lit	Red	Non recoverable error

OUT LED

Name	Status	Color	Details
1 ~ 8	☐ Not lit	-	No unit power supplied / Output OFF
	☒ Lit	Green	Output ON

Pin Assignment / Internal Circuit

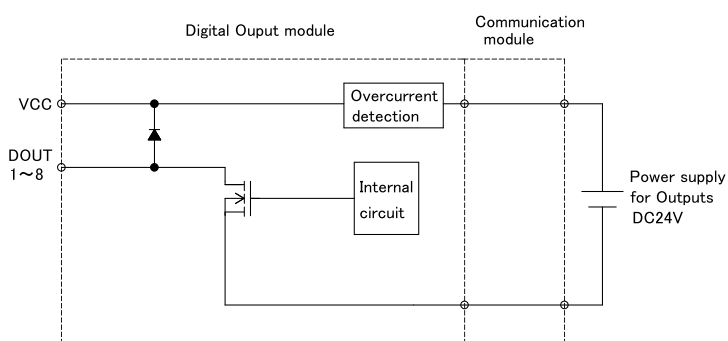
YS9-D8S Pin Assignment

Connector Type	Connector 1		Connector 2		Connector 3		Connector 4	
	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
 M12 socket A-coded	1	VCC	1	VCC	1	VCC	1	VCC
	2	DOUT2	2	DOUT4	2	DOUT6	2	DOUT8
	3	N.C.	3	N.C.	3	N.C.	3	N.C.
	4	DOUT1	4	DOUT3	4	DOUT5	4	DOUT7
	5	F.G.	5	F.G.	5	F.G.	5	F.G.

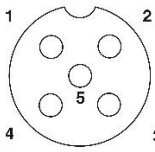
※VCC is shared internally.

※Connect the VCC for the load to the same module as the one connected to DOUT.

YS9-D8S Internal Circuit

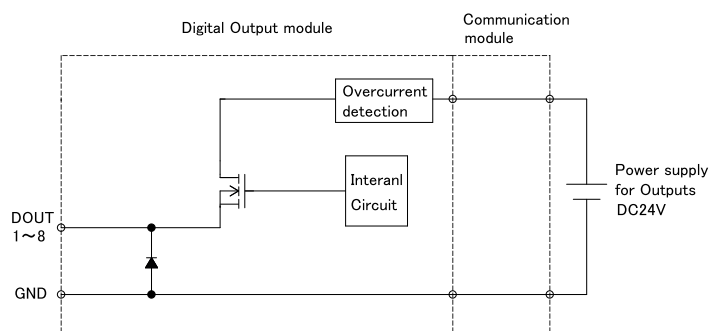


YS9-D8S-M Pin Assignment

Connector Type	Connector 1		Connector 2		Connector 3		Connector 4	
	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name	Pin No.	Signal name
 M12 socket A-coded	1	N.C.	1	N.C.	1	N.C.	1	N.C.
	2	DOUT2	2	DOUT4	2	DOUT6	2	DOUT8
	3	GND	3	GND	3	GND	3	GND
	4	DOUT1	4	DOUT3	4	DOUT5	4	DOUT7
	5	F.G.	5	F.G.	5	F.G.	5	F.G.

※GND is shared internally.

YS9-D8S-M Internal Circuit



6-6 Analog Output Module

This section describes the specifications and functions of the I/O expansion module YS9-A2S.

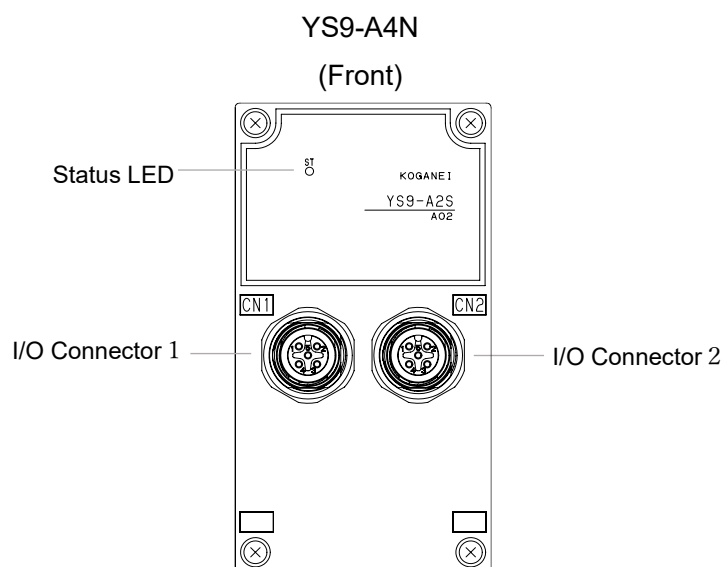
6-6-1 Specifications

Model	YS9-A2S	
Output mode	Voltage	Current
Number of output points	2 points	
Max. load current	1A / module	
Load impedance	1k Ω or more	600 Ω or less
Output signal range※1	0-5V / 0-10V	0-20mA
Resolution	12bit	
Conversion accuracy (25°C)	$\pm 0.5\%$ F.S.	
Protection function	Overcurrent detection※2, output short-circuit protection	
Internal current consumption	Power Supply for Unit: 40mA or less Power Supply for Outputs: 30mA or less (excluding sensor supply current)	
Protection rating	IP65/67	
M12 connector tightening torque	0.4N · m	
Mass	160g	

※1 The output range can be configured from the Support Software. For configuration procedures, refer to the HV054 YS9 Support Software User's Manual.

※2 When an overcurrent is detected, the connection to the PLC is disconnected. The unit does not automatically recover even after the cause of the overcurrent is removed. Disconnect the power, remove the cause, and then turn the power on again.

6-6-2 Major Parts and Functions



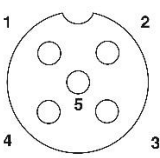
LED Displays

Status LED

Name	Status	Color	Details
ST	☐ Not lit	-	No unit power supplied
	☒ Lit	Orange	Initialization in progress
	☒ Lit	Green	Input data can be transmitted to master
	☒ Flashing	Green	Not linked with master
	☒ Flashing	Orange	Communication settings incomplete
	☒ Lit	Red	Non recoverable error

Pin Assignment / Internal Circuit

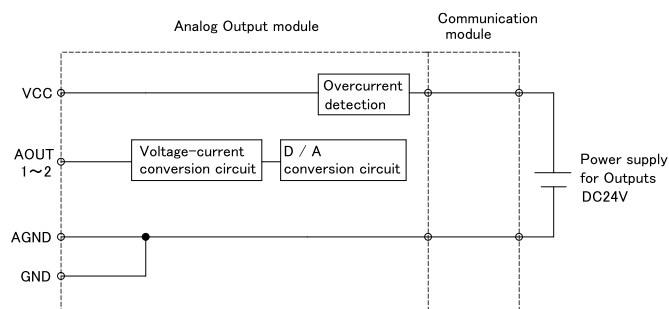
YS9-A2S Pin Assignment

Connector Type	Connector 1		Connector 2	
	Pin No.	Signal name	Pin No.	Signal name
 M12 socket A-coded	1	VCC	1	VCC
	2	AOUT1	2	AOUT2
	3	GND	3	GND
	4	AGND1	4	AGND2
	5	F.G.	5	F.G.

※VCC is shared internally.

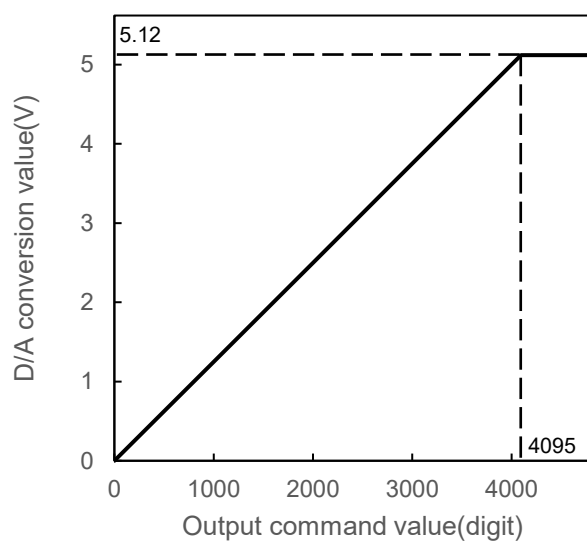
※AGND and GND are shared internally.

YS9-A2S Internal Circuit



6-6-3 D/A Conversion Table

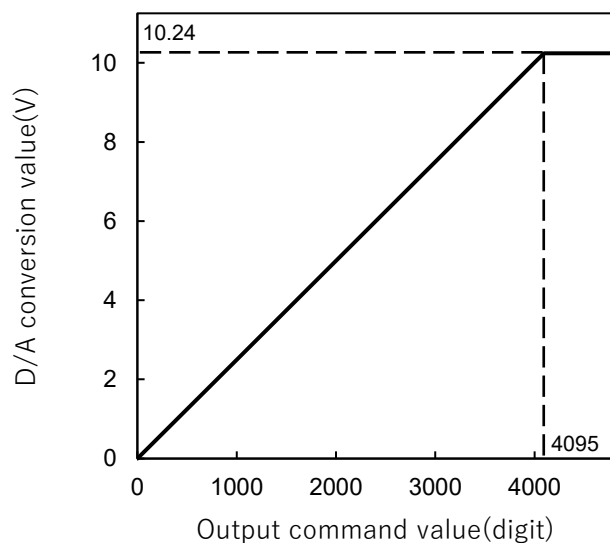
Output Range 0-5V



Output command value	D/A conversion value (V)
0	0
400	0.5
800	1
1200	1.5
1600	2
2000	2.5
2400	3
2800	3.5
3200	4
3600	4.5
4000	5

※For output commands of 4095 or more, the output is 5.12V.

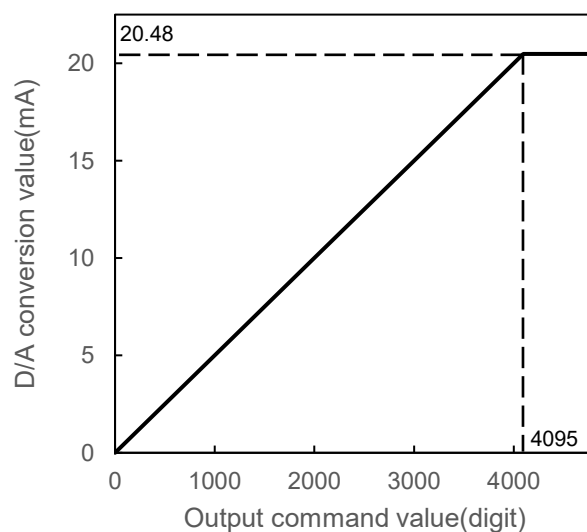
Output Range 0-10V



Output command value	D/A conversion value (V)
0	0
400	1
800	2
1200	3
1600	4
2000	5
2400	6
2800	7
3200	8
3600	9
4000	10

※For output commands of 4095 or more, the output is 10.24V.

Output Range 0-20mA



Output command value	D/A conversion value (mA)
0	0
400	2
800	4
1200	6
1600	8
2000	10
2400	12
2800	14
3200	16
3600	18
4000	20

※For output commands of 4095 or more, the output is 20.48mA.

7 Installation

This section describes how to install I/O terminals.

7-1 Installation via Direct Mounting

Obtain M4 screws and screw them perpendicularly to the mounting holes.

[Tightening torque $1.47\text{N} \cdot \text{m} \pm 15\%$]

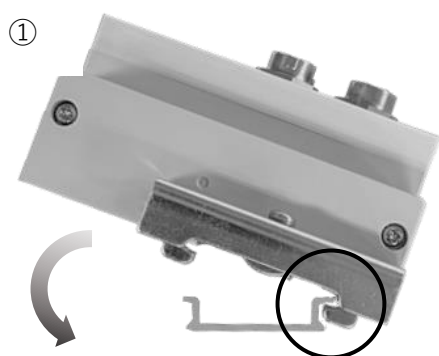


7-2 Installation to DIN rail

- ① Install the I/O terminal to the DIN rail.

First hook the lower hook of the DIN rail fitting to the DIN rail, then push the I/O terminal body down and fit it into the DIN rail

- ② Fasten the DIN rail mounting bracket with screws. [Tightening torque $1.47\text{N} \cdot \text{m} \pm 15\%$]



※Refer to F series solenoid valve catalog No. V3155 for information on how to remove or install manifold solenoid valves.

8 Wiring Precautions

- Be sure to **turn off** the power supply when wiring to the connectors or inserting/removing the connectors.

Wiring with the power on may result in electric shock or product failure.

- Always use connector-equipped cables and perform proper wiring to external devices.

- For unused connectors, always attach a waterproof cap (YS9Z-SA12).

(Tightening torque: 0.4 N·m)

Proper use of waterproof caps is required to maintain IP65/67 protection.

9 Increasing / Decreasing Number of I/O Expansion Modules

9-1 Precautions for Increasing / Decreasing Number of Modules

- Be sure to turn off the power to the communication module before increasing or decreasing the number of I/O expansion modules. Attaching or detaching modules with the power on may result in malfunctions.
- Please work on a horizontal plane when increasing or decreasing the number of I/O expansion modules.
- Always attach the left end block (YS9Z-LE).
Operation without the end block may result in malfunctions.
- To prevent water ingress, wipe off any moisture and ensure the unit is dry before work.
- When assembling or disassembling the product, such as adding or removing modules or replacing parts, the following may cause air leakage or allow water or dust to enter:
 - Insufficient tightening
 - Intrusion of foreign matter
 - Scratches on componentsPerform the work carefully, and be sure to confirm the specified tightening torque.
- Do not loosen the screws located at the four corners on the front of each module.

9-2 How to Increase / Decrease Number of I/O Expansion Modules

9-2-1 How to Increase

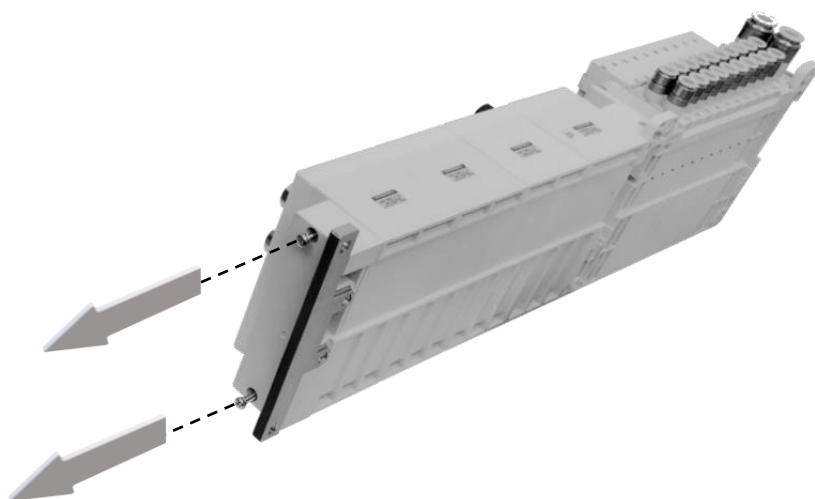
As an example of adding modules, this section explains how to increase the number of modules by adding a analog output module (YS9-A2S) to an I/O terminal with the following initial configuration.

Initial Configuration : YS9EB3-3 mod.1 : YS9-D8N, mod.2 : YS9-A4N, mod.3 : YS9-D8S

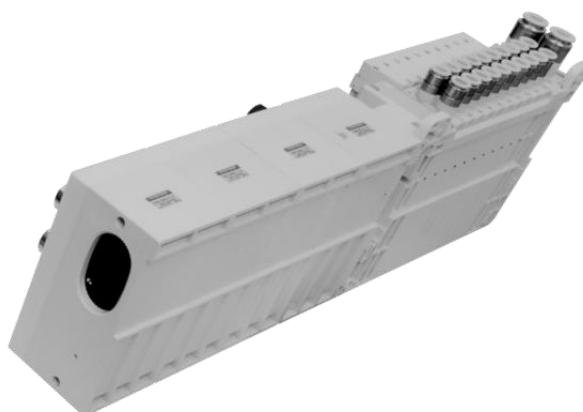
Items required for additional connections : Analog output module (YS9-A2S)

Connecting rod (additional part YS9Z-1)

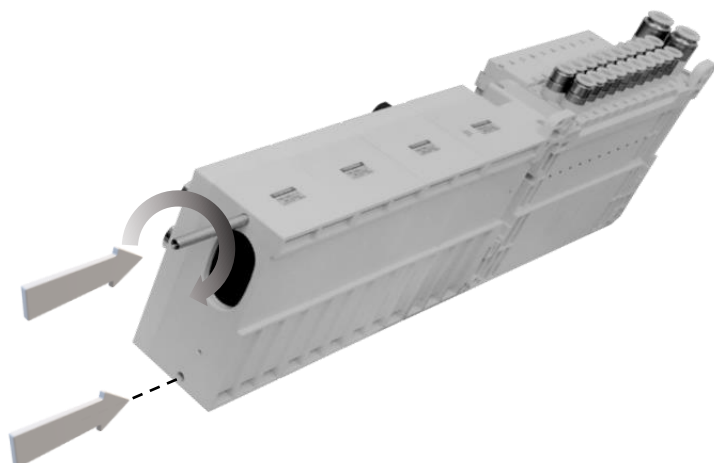
- ① Remove the screws from the I/O terminal at the positions shown in the figure below.



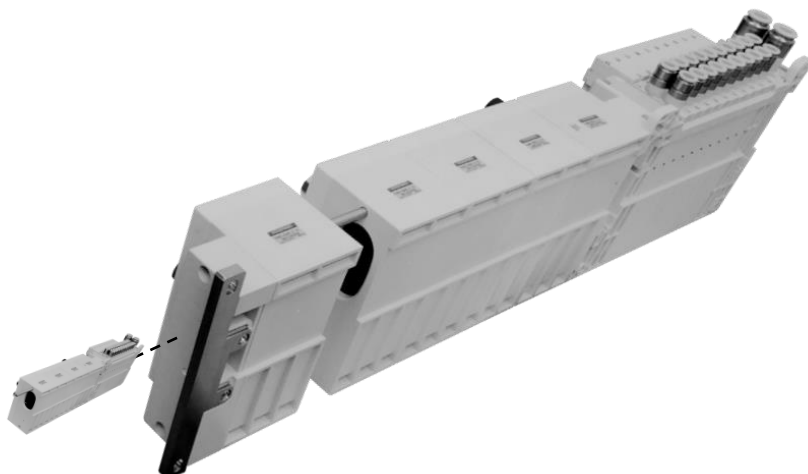
- ② Remove the left end block from the I/O terminal.



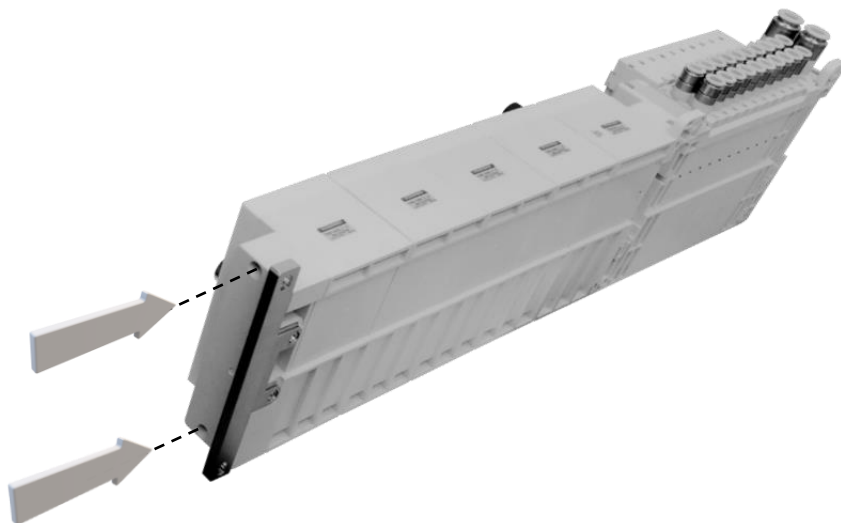
- ③ Attach the connecting rod(YS9Z-1) to the existing rod.



- ④ Insert the analog output module and end block along the rod and connect them.



- ⑤ Fasten screws at the positions shown in the figure below.
[Tightening torque $0.49\text{N} \cdot \text{m} \pm 20\%$]



9-2-2 How to decrease

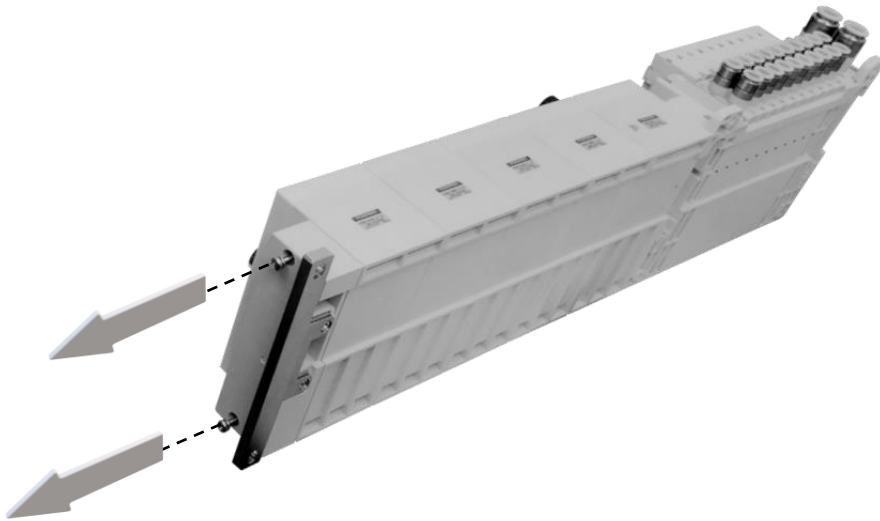
As an example of removing modules, this section explains how to reduce the number of modules by removing analog output module (YS9-A2S) from an I/O terminal with the following initial configuration.

Initial Configuration : YS9EB3-4 mod.1 : YS9-D8N, mod.2 : YS9-A4N, mod.3 : YS9-D8S,
mod4 : YS9-A2S

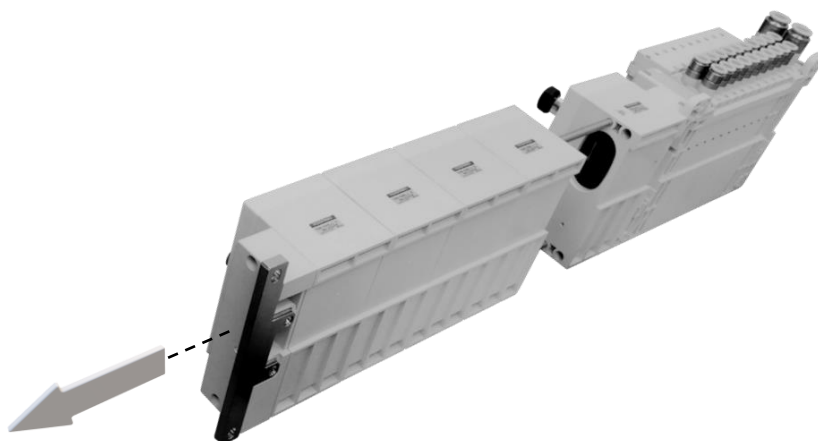
Items required for additional connections : Connecting rod (additional part YS9Z-3)

※At the factory default setting, a connecting rod with a length corresponding to the number of connected I/O expansion modules is installed. Therefore, when decreasing the number of modules from the factory default configuration, a connecting rod corresponding to the number of connected I/O expansion modules after reduction is required.

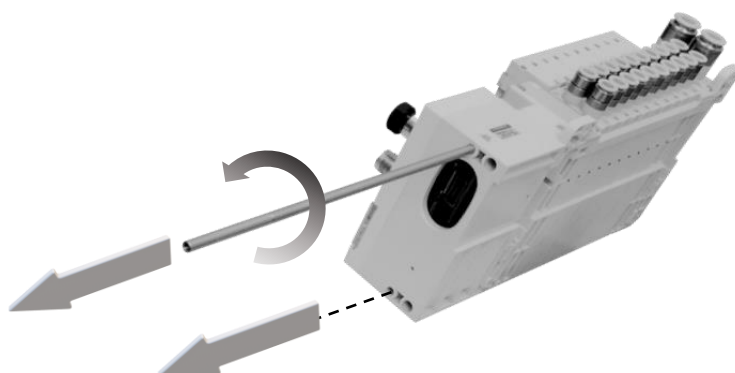
- ① Remove the screws from the I/O terminal at the positions shown in the figure below.



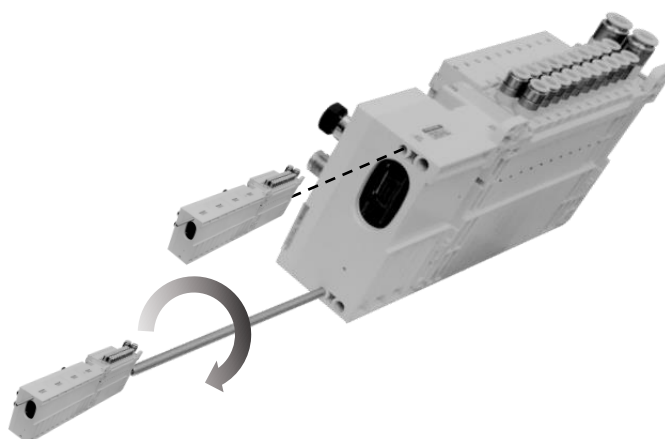
- ② Remove the left end block and I/O expansion modules from the communication module.



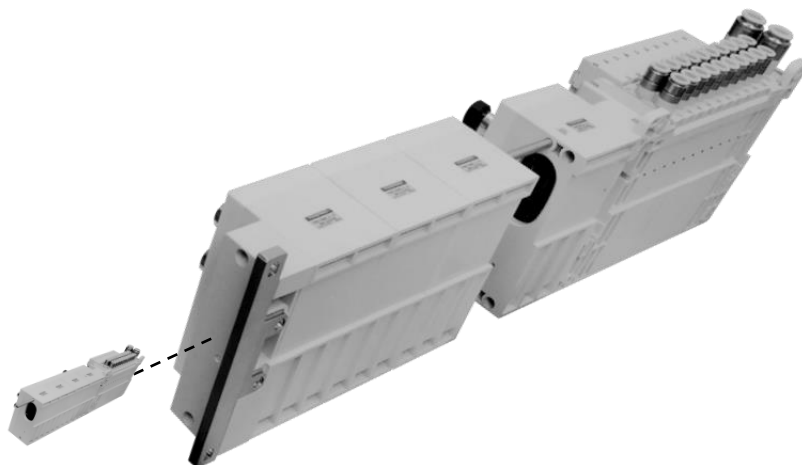
- ③ Remove the connecting rod from the communication module.
※Store it safely for future reuse.



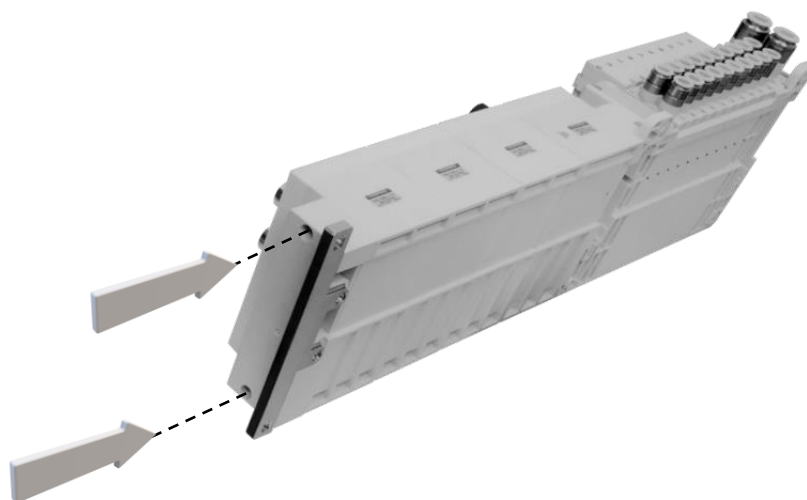
- ④ Attach the new connecting rod(YS9Z-3) to the communication module.



- ⑤ Insert the expansion I/O modules, with the analog output module removed, and the left end block along the rod, and connect them to the communication module.



- ⑥ Fasten screws at the positions shown in the figure below.
[Tightening torque $0.49\text{N} \cdot \text{m} \pm 20\%$]



10 Configuration File

Download from :

<https://official.koganei.co.jp/>

11 I/O Data Allocation

I/O data allocation is determined by the number of occupied stations, regardless of :

Vale type or number of vales

Type or position of I/O expansion modules

11-1 I/O Data Occupied by Number of Occupied Stations

Remote Input (RX)	Occupied stations			
	1 station	2 stations	3 stations	4 stations
RX (n+0)0 ~ RX (n+0)F	Domain (16bit)	Domain (48bit)	Domain (80it)	Domain (112bit)
RX (n+1)0 ~ RX (n+1)F	System area (16bit)			
RX (n+2)0 ~ RX (n+2)F				
RX (n+3)0 ~ RX (n+3)F		System area (16bit)		
RX (n+4)0 ~ RX (n+4)F			System area (16bit)	
RX (n+5)0 ~ RX (n+5)F				
RX (n+6)0 ~ RX (n+6)F				
RX (n+7)0 ~ RX (n+7)F				System area (16bit)

Remote Output (RY)	Occupied stations			
	1 stations	2 stations	3 stations	4 stations
RY (n+0)0 ~ RY (n+0)F	Domain (16bit)	Domain (48bit)	Domain (80it)	Domain (112bit)
RY (n+1)0 ~ RY (n+1)F	System area (16bit)			
RY (n+2)0 ~ RY (n+2)F				
RY (n+3)0 ~ RY (n+3)F		System area (16bit)		
RY (n+4)0 ~ RY (n+4)F			System area (16bit)	
RY (n+5)0 ~ RY (n+5)F				
RY (n+6)0 ~ RY (n+6)F				
RY (n+7)0 ~ RY (n+7)F				System area (16bit)

※The domain is the area occupied according to the settings for the number of remote device stations.

The last 16 bits of RX and RY are used as the system area for the remote device station.

n indicates the register address of each station number.

Remote Register Input (RW _r)	Occupied stations			
	1 station	2 stations	3 stations	4 stations
RW _r (n+0)	Domain (4Word)	Domain (8Word)	Domain (12Word)	Domain (16Word)
RW _r (n+1)				
RW _r (n+2)				
RW _r (n+3)				
RW _r (n+4)				
RW _r (n+5)				
RW _r (n+6)				
RW _r (n+7)				
RW _r (n+8)				
RW _r (n+9)				
RW _r (n+A)				
RW _r (n+B)				
RW _r (n+C)				
RW _r (n+D)				
RW _r (n+E)				
RW _r (n+F)				

Remote Register Output (RW _w)	Occupied stations			
	1 station	2 stations	3 stations	4 stations
RW _w (n+0)	Domain (4Word)	Domain (8Word)	Domain (12Word)	Domain (16Word)
RW _w (n+1)				
RW _w (n+2)				
RW _w (n+3)				
RW _w (n+4)				
RW _w (n+5)				
RW _w (n+6)				
RW _w (n+7)				
RW _w (n+8)				
RW _w (n+9)				
RW _w (n+A)				
RW _w (n+B)				
RW _w (n+C)				
RW _w (n+D)				
RW _w (n+E)				
RW _w (n+F)				

※The domain is the area occupied according to the settings for the number of remote device stations.

n indicates the register address of each station number.

11-2 I/O Data Allocation Rules

Shows the number of I/O bits occupied per module.

Name	Model	Bit area		Word area	
		Remote Input (RX)	Remote Output (RY)	Remote Register Input (RW _r)	Remote Register Output (RW _w)
Communication	YS9-B3	-	16/32bit※	-	-
Digital Input	YS9-D8N-□	8bit	-	-	-
Digital Output	YS9-D8S-□	-	8bit	-	-
Analog Input	YS9-A4N	-	-	4Word	-
Analog Output	YS9-A2S	-	-	-	2Word

※The number of I/O bits occupied differs depending on the number of occupied stations. With 1 occupied station, the area is 16 bits; otherwise, the area is 32 bits.

11-3 Relationship Between I/O Data Allocation and I/O Modules

I/O is allocated in order, starting from the communication module. The I/O allocation map is shown below, using the following configuration as an example.

Assign module numbers for each module type in order from right to left.



YS9-A2S	YS9-D8S-□	YS9-D8S-□	YS9-A4N	YS9-A4N	YS9-D8N-□	YS9-D8N-□	YS9-D8N-□	YS9-B3	Valve
Analog output 1 (AO1)	Digital Output 2 (DO2)	Digital Output 1 (DO1)	Analog input 2 (AI2)	Analog Input 1 (AI1)	Digital Input 3 (DI3)	Digital Input 2 (DI2)	Digital Input 1 (DI1)	Communication Module	

11-3-1 Number of occupied stations: 1-station setting

The following shows the I/O allocation map when the number of occupied stations is 1.

Remote Input (RX)

Link device	Assigned to
RX (n + 0) 0	DI1 Ch.1
RX (n + 0) 1	DI1 Ch.2
RX (n + 0) 2	DI1 Ch.3
RX (n + 0) 3	DI1 Ch.4
RX (n + 0) 4	DI1 Ch.5
RX (n + 0) 5	DI1 Ch.6
RX (n + 0) 6	DI1 Ch.7
RX (n + 0) 7	DI1 Ch.8
RX (n + 0) 8	DI2 Ch.1
RX (n + 0) 9	DI2 Ch.2
RX (n + 0) A	DI2 Ch.3
RX (n + 0) B	DI2 Ch.4
RX (n + 0) C	DI2 Ch.5
RX (n + 0) D	DI2 Ch.6
RX (n + 0) E	DI2 Ch.7
RX (n + 0) F	DI2 Ch.8
RX (n + 1) 0 ~ RX (n + 1) F	System area

※DI3 cannot be I/O-allocated. To use it, set the number of occupied stations to 2 or more.

Remote Output (RY)

Link device	Assigned to
RY (n + 0) 0	Valve Ch.1
RY (n + 0) 1	Valve Ch.2
RY (n + 0) 2	Valve Ch.3
RY (n + 0) 3	Valve Ch.4
RY (n + 0) 4	Valve Ch.5
RY (n + 0) 5	Valve Ch.6
RY (n + 0) 6	Valve Ch.7
RY (n + 0) 7	Valve Ch.8
RY (n + 0) 8	Valve Ch.9
RY (n + 0) 9	Valve Ch.10
RY (n + 0) A	Valve Ch.11
RY (n + 0) B	Valve Ch.12
RY (n + 0) C	Valve Ch.13
RY (n + 0) D	Valve Ch.14
RY (n + 0) E	Valve Ch.15
RY (n + 0) F	Valve Ch.16
RY (n + 1) 0 ~ RY (n + 1) F	System area

※Regardless of the number of valve stations connected to the communication module, 16 valve channels are I/O-allocated.

Valve Ch.17 to Ch.32, DO1, and DO2 cannot be I/O-allocated. To use them, set the number of occupied stations to 2 or more.

Remote Register Input (RWr)

Remote register input	Corresponding device
RWr (n+0)	AI1 Ch.1
RWr (n+1)	AI1 Ch.2
RWr (n+2)	AI1 Ch.3
RWr (n+3)	AI1 Ch.4

※AI2 cannot be I/O-allocated. To use it, set the number of occupied stations to 2 or more.

Remote Register Output (RWw)

Remote register output	Corresponding device
RWw (n+0)	AO1 Ch.1
RWw (n+1)	AO1 Ch.2
RWw (n+2) ~ RWw (n+3)	Unused

11-3-2 Number of occupied stations: 2-station setting

The following shows the I/O allocation map when the number of occupied stations is 2.

Remote Input (RX)

Link device	Assigned to
RX (n + 0) 0	DI1 Ch.1
RX (n + 0) 1	DI1 Ch.2
RX (n + 0) 2	DI1 Ch.3
RX (n + 0) 3	DI1 Ch.4
RX (n + 0) 4	DI1 Ch.5
RX (n + 0) 5	DI1 Ch.6
RX (n + 0) 6	DI1 Ch.7
RX (n + 0) 7	DI1 Ch.8
RX (n + 0) 8	DI2 Ch.1
RX (n + 0) 9	DI2 Ch.2
RX (n + 0) A	DI2 Ch.3
RX (n + 0) B	DI2 Ch.4
RX (n + 0) C	DI2 Ch.5
RX (n + 0) D	DI2 Ch.6
RX (n + 0) E	DI2 Ch.7
RX (n + 0) F	DI2 Ch.8

Link device	Assigned to
RX (n + 1) 0	DI3 Ch.1
RX (n + 1) 1	DI3 Ch.2
RX (n + 1) 2	DI3 Ch.3
RX (n + 1) 3	DI3 Ch.4
RX (n + 1) 4	DI3 Ch.5
RX (n + 1) 5	DI3 Ch.6
RX (n + 1) 6	DI3 Ch.7
RX (n + 1) 7	DI3 Ch.8
RX (n + 2) 8 ~ RX (n + 2) F	Unused
RX (n + 3) 0 ~ RX (n + 3) F	System area

Remote Output (RY)

Link device	Assigned to
RY (n + 0) 0	Valve Ch.1
RY (n + 0) 1	Valve Ch.2
RY (n + 0) 2	Valve Ch.3
RY (n + 0) 3	Valve Ch.4
RY (n + 0) 4	Valve Ch.5
RY (n + 0) 5	Valve Ch.6
RY (n + 0) 6	Valve Ch.7
RY (n + 0) 7	Valve Ch.8
RY (n + 0) 8	Valve Ch.9
RY (n + 0) 9	Valve Ch.10
RY (n + 0) A	Valve Ch.11
RY (n + 0) B	Valve Ch.12
RY (n + 0) C	Valve Ch.13
RY (n + 0) D	Valve Ch.14
RY (n + 0) E	Valve Ch.15
RY (n + 0) F	Valve Ch.16
RY (n + 1) 0	Valve Ch.17
RY (n + 1) 1	Valve Ch.18
RY (n + 1) 2	Valve Ch.19
RY (n + 1) 3	Valve Ch.20
RY (n + 1) 4	Valve Ch.21
RY (n + 1) 5	Valve Ch.22
RY (n + 1) 6	Valve Ch.23
RY (n + 1) 7	Valve Ch.24

Link device	Assigned to
RY (n + 1) 8	Valve Ch.25
RY (n + 1) 9	Valve Ch.26
RY (n + 1) A	Valve Ch.27
RY (n + 1) B	Valve Ch.28
RY (n + 1) C	Valve Ch.29
RY (n + 1) D	Valve Ch.30
RY (n + 1) E	Valve Ch.31
RY (n + 1) F	Valve Ch.32
RY (n + 2) 0	DO1 Ch.1
RY (n + 2) 1	DO1 Ch.2
RY (n + 2) 2	DO1 Ch.3
RY (n + 2) 3	DO1 Ch.4
RY (n + 2) 4	DO1 Ch.5
RY (n + 2) 5	DO1 Ch.6
RY (n + 2) 6	DO1 Ch.7
RY (n + 2) 7	DO1 Ch.8
RY (n + 2) 8	DO2 Ch.1
RY (n + 2) 9	DO2 Ch.2
RY (n + 2) A	DO2 Ch.3
RY (n + 2) B	DO2 Ch.4
RY (n + 2) C	DO2 Ch.5
RY (n + 2) D	DO2 Ch.6
RY (n + 2) E	DO2 Ch.7
RY (n + 2) F	DO2 Ch.8
RY (n + 3) 0 ~ RY (n + 3) F	System area

※Regardless of the number of valve stations connected to the communication module, 32 valve channels are I/O-allocated.

Remote Register Input (RWr)

Link device	Assigned to
RWr (n+0)	AI1 Ch.1
RWr (n+1)	AI1 Ch.2
RWr (n+2)	AI1 Ch.3
RWr (n+3)	AI1 Ch.4
RWr (n+4)	AI2 Ch.1
RWr (n+5)	AI2 Ch.2
RWr (n+6)	AI2 Ch.3
RWr (n+7)	AI2 Ch.4

Remote Register Output (RWw)

Link device	Assigned to
RWw (n+0)	AO1 Ch.1
RWw (n+1)	AO1 Ch.2
RWw (n+2) ~ RWw (n+7)	Unused

11-3-3 Number of occupied stations: 3-station setting

The following shows the I/O allocation map when the number of occupied stations is 3.

Remote Input (RX)

Link device	Assigned to
RX (n + 0) 0	DI1 Ch.1
RX (n + 0) 1	DI1 Ch.2
RX (n + 0) 2	DI1 Ch.3
RX (n + 0) 3	DI1 Ch.4
RX (n + 0) 4	DI1 Ch.5
RX (n + 0) 5	DI1 Ch.6
RX (n + 0) 6	DI1 Ch.7
RX (n + 0) 7	DI1 Ch.8
RX (n + 0) 8	DI2 Ch.1
RX (n + 0) 9	DI2 Ch.2
RX (n + 0) A	DI2 Ch.3
RX (n + 0) B	DI2 Ch.4
RX (n + 0) C	DI2 Ch.5
RX (n + 0) D	DI2 Ch.6
RX (n + 0) E	DI2 Ch.7
RX (n + 0) F	DI2 Ch.8

Link device	Assigned to
RX (n + 1) 0	DI3 Ch.1
RX (n + 1) 1	DI3 Ch.2
RX (n + 1) 2	DI3 Ch.3
RX (n + 1) 3	DI3 Ch.4
RX (n + 1) 4	DI3 Ch.5
RX (n + 1) 5	DI3 Ch.6
RX (n + 1) 6	DI3 Ch.7
RX (n + 1) 7	DI3 Ch.8
RX (n + 2) 8 ~ RX (n + 4) F	Unused
RX (n + 5) 0 ~ RX (n + 5) F	System area

Remote Output (RY)

Link device	Assigned to
RY (n + 0) 0	Valve Ch.1
RY (n + 0) 1	Valve Ch.2
RY (n + 0) 2	Valve Ch.3
RY (n + 0) 3	Valve Ch.4
RY (n + 0) 4	Valve Ch.5
RY (n + 0) 5	Valve Ch.6
RY (n + 0) 6	Valve Ch.7
RY (n + 0) 7	Valve Ch.8
RY (n + 0) 8	Valve Ch.9
RY (n + 0) 9	Valve Ch.10
RY (n + 0) A	Valve Ch.11
RY (n + 0) B	Valve Ch.12
RY (n + 0) C	Valve Ch.13
RY (n + 0) D	Valve Ch.14
RY (n + 0) E	Valve Ch.15
RY (n + 0) F	Valve Ch.16
RY (n + 1) 0	Valve Ch.17
RY (n + 1) 1	Valve Ch.18
RY (n + 1) 2	Valve Ch.19
RY (n + 1) 3	Valve Ch.20
RY (n + 1) 4	Valve Ch.21
RY (n + 1) 5	Valve Ch.22
RY (n + 1) 6	Valve Ch.23
RY (n + 1) 7	Valve Ch.24

Link device	Assigned to
RY (n + 1) 8	Valve Ch.25
RY (n + 1) 9	Valve Ch.26
RY (n + 1) A	Valve Ch.27
RY (n + 1) B	Valve Ch.28
RY (n + 1) C	Valve Ch.29
RY (n + 1) D	Valve Ch.30
RY (n + 1) E	Valve Ch.31
RY (n + 1) F	Valve Ch.32
RY (n + 2) 0	DO1 Ch.1
RY (n + 2) 1	DO1 Ch.2
RY (n + 2) 2	DO1 Ch.3
RY (n + 2) 3	DO1 Ch.4
RY (n + 2) 4	DO1 Ch.5
RY (n + 2) 5	DO1 Ch.6
RY (n + 2) 6	DO1 Ch.7
RY (n + 2) 7	DO1 Ch.8
RY (n + 2) 8	DO2 Ch.1
RY (n + 2) 9	DO2 Ch.2
RY (n + 2) A	DO2 Ch.3
RY (n + 2) B	DO2 Ch.4
RY (n + 2) C	DO2 Ch.5
RY (n + 2) D	DO2 Ch.6
RY (n + 2) E	DO2 Ch.7
RY (n + 2) F	DO2 Ch.8
RX (n + 3) 0 ~ RX (n + 4) F	Unused
RX (n + 5) 0 ~ RX (n + 5) F	System area

※Regardless of the number of valve stations connected to the communication module, 32 valve channels are I/O-allocated.

Remote Register Input (RWr)

Link device	Assigned to
RWr (n+0)	AI1 Ch.1
RWr (n+1)	AI1 Ch.2
RWr (n+2)	AI1 Ch.3
RWr (n+3)	AI1 Ch.4
RWr (n+4)	AI2 Ch.1
RWr (n+5)	AI2 Ch.2
RWr (n+6)	AI2 Ch.3
RWr (n+7)	AI2 Ch.4
RWr (n+8) ~ RWr (n+B)	Unused

Remote Register Output (RWw)

Link device	Assigned to
RWw (n+0)	AO1 Ch.1
RWw (n+1)	AO1 Ch.2
RWw (n+2) ~ RWw (n+B)	Unused

11-3-4 Number of occupied stations: 4-station setting

The following shows the I/O allocation map when the number of occupied stations is 4.

Remote Input (RX)

Link device	Assigned to
RX (n + 0) 0	DI1 Ch.1
RX (n + 0) 1	DI1 Ch.2
RX (n + 0) 2	DI1 Ch.3
RX (n + 0) 3	DI1 Ch.4
RX (n + 0) 4	DI1 Ch.5
RX (n + 0) 5	DI1 Ch.6
RX (n + 0) 6	DI1 Ch.7
RX (n + 0) 7	DI1 Ch.8
RX (n + 0) 8	DI2 Ch.1
RX (n + 0) 9	DI2 Ch.2
RX (n + 0) A	DI2 Ch.3
RX (n + 0) B	DI2 Ch.4
RX (n + 0) C	DI2 Ch.5
RX (n + 0) D	DI2 Ch.6
RX (n + 0) E	DI2 Ch.7
RX (n + 0) F	DI2 Ch.8

Link device	Assigned to
RX (n + 1) 0	DI3 Ch.1
RX (n + 1) 1	DI3 Ch.2
RX (n + 1) 2	DI3 Ch.3
RX (n + 1) 3	DI3 Ch.4
RX (n + 1) 4	DI3 Ch.5
RX (n + 1) 5	DI3 Ch.6
RX (n + 1) 6	DI3 Ch.7
RX (n + 1) 7	DI3 Ch.8
RX (n + 2) 8 ~ RX (n + 6) F	Unused
RX (n + 7) 0 ~ RX (n + 7) F	System area

Remote Output (RY)

Link device	Assigned to
RY (n + 0) 0	Valve Ch.1
RY (n + 0) 1	Valve Ch.2
RY (n + 0) 2	Valve Ch.3
RY (n + 0) 3	Valve Ch.4
RY (n + 0) 4	Valve Ch.5
RY (n + 0) 5	Valve Ch.6
RY (n + 0) 6	Valve Ch.7
RY (n + 0) 7	Valve Ch.8
RY (n + 0) 8	Valve Ch.9
RY (n + 0) 9	Valve Ch.10
RY (n + 0) A	Valve Ch.11
RY (n + 0) B	Valve Ch.12
RY (n + 0) C	Valve Ch.13
RY (n + 0) D	Valve Ch.14
RY (n + 0) E	Valve Ch.15
RY (n + 0) F	Valve Ch.16
RY (n + 1) 0	Valve Ch.17
RY (n + 1) 1	Valve Ch.18
RY (n + 1) 2	Valve Ch.19
RY (n + 1) 3	Valve Ch.20
RY (n + 1) 4	Valve Ch.21
RY (n + 1) 5	Valve Ch.22
RY (n + 1) 6	Valve Ch.23
RY (n + 1) 7	Valve Ch.24

Link device	Assigned to
RY (n + 1) 8	Valve Ch.25
RY (n + 1) 9	Valve Ch.26
RY (n + 1) A	Valve Ch.27
RY (n + 1) B	Valve Ch.28
RY (n + 1) C	Valve Ch.29
RY (n + 1) D	Valve Ch.30
RY (n + 1) E	Valve Ch.31
RY (n + 1) F	Valve Ch.32
RY (n + 2) 0	DO1 Ch.1
RY (n + 2) 1	DO1 Ch.2
RY (n + 2) 2	DO1 Ch.3
RY (n + 2) 3	DO1 Ch.4
RY (n + 2) 4	DO1 Ch.5
RY (n + 2) 5	DO1 Ch.6
RY (n + 2) 6	DO1 Ch.7
RY (n + 2) 7	DO1 Ch.8
RY (n + 2) 8	DO2 Ch.1
RY (n + 2) 9	DO2 Ch.2
RY (n + 2) A	DO2 Ch.3
RY (n + 2) B	DO2 Ch.4
RY (n + 2) C	DO2 Ch.5
RY (n + 2) D	DO2 Ch.6
RY (n + 2) E	DO2 Ch.7
RY (n + 2) F	DO2 Ch.8
RX (n + 3) 0 ~ RX (n + 6) F	Unused
RX (n + 7) 0 ~ RX (n + 7) F	System area

※Regardless of the number of valve stations connected to the communication module, 32 valve channels are I/O-allocated.

Remote Register Input (RW_r)

Link device	Assigned to
RW _r (n+0)	AI1 Ch.1
RW _r (n+1)	AI1 Ch.2
RW _r (n+2)	AI1 Ch.3
RW _r (n+3)	AI1 Ch.4
RW _r (n+4)	AI2 Ch.1
RW _r (n+5)	AI2 Ch.2
RW _r (n+6)	AI2 Ch.3
RW _r (n+7)	AI2 Ch.4
RW _r (n+8) ~ RW _r (n+F)	Unused

Remote Register Output (RW_w)

Link device	Assigned to
RW _w (n+0)	AO1 Ch.1
RW _w (n+1)	AO1 Ch.2
RW _w (n+2) ~ RW _w (n+F)	Unused

11-4 Relationship Between I/O Data Allocation and Solenoid Valves

The relationship between I/O data allocation and solenoid valves differs depending on the "Wiring Specifications" specified in the manifold order code.

Wiring specifications

Blank (packed wiring): The wiring is matched to the specifications of the valve being installed.

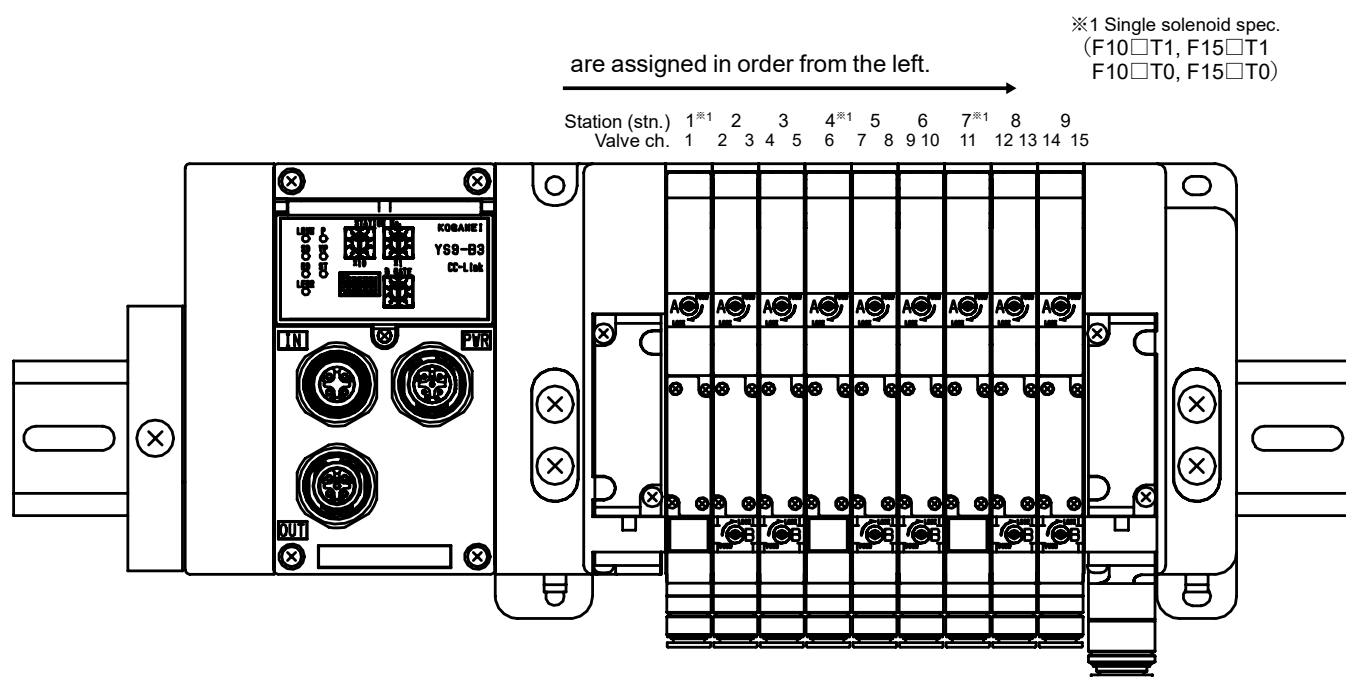
-W (double wiring): All wiring is for double solenoids, regardless of the specifications of the mounted valves.

When the wiring specification is "Blank" (packed wiring)

The valves specified in the single solenoid specifications※1 when ordering are wired to solenoid A only, and are not wired to solenoid B because wiring is done according to specifications for the mounted valves. This means that it cannot function as a double solenoid valve after it is delivered because no current flows to solenoid B, even if it is switched from a single solenoid valve.

When the wiring specification is "-W" (double wiring)

All wiring is for double solenoids.



(Example configuration above) F10M9XU-JR-B3P

stn. 1	F10T1-P-A1	DC24V
stn. 2, 3	F10T2-P-A1	DC24V
stn. 4	F10T1-P-A1	DC24V
stn. 5, 6	F10T2-P-A1	DC24V
stn. 7	F10T1-P-A1	DC24V
stn. 8, 9	F10T2-P-A1	DC24V

Allocation to CC-Link Remote Output (RY) in the example configuration (when station number is set to 01)

① Wiring specification: "Blank" (packed wiring)

stn.		1		2		3		4		5		6		7		8		9	
Comm. Module YS9-B3	ch.																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15				
	RY																		
	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E				

② Wiring specification: "-W" (double wiring)

stn.		1		2		3		4		5		6		7		8		9	
Comm.	ch.																		
Module	1			2	3	4	5	6		7	8	9	10	11		12	13	14	15
YS9-B3	RY																		
	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	

 : Unused area

12 Parameter Settings

The I/O Terminal YS9 series has parameters that can be configured per module or per channel. The parameters can be set using the YS9 Support Software. For configuration procedures, refer to the HV054 YS9 Support Software User's Manual.

12-1 Parameter Definitions

- Communication module parameters (Target module: YS9-B3)

No	Parameter name	Definition	Setting value	Setting description
1	Output at communication error	Sets the valve output state when a communication error occurs. Follows the Hold/Clear switch setting; cannot be changed from the Support Software.	Clear (Default)	Turns the output off.
			Hold	Holds the output that was active when the communication error occurred.
2	Configuration error detection mode	Determines whether configuration error detection is performed. Records the module configuration at the moment this parameter is set to ON, and from the next start-up onward, checks whether the recorded configuration matches the actual module configuration.	OFF (Default)	Configuration error detection is not performed.
			ON	Configuration error detection is performed.

- Digital input module parameters (Target modules: YS9-D8N / YS9-D8N-P)

No	Parameter name	Definition	Setting value	Setting description
1	On delay time	Sets the input delay time per channel.	100us (Default)	Selects the input delay time.
			1ms	
			5ms	
			10ms	
			20ms	

• Analog input module parameters (Target module: YS9-A4N)

No	Parameter name	Definition	Setting value	Setting description
1	Input mode	Sets the analog input mode (range) per channel.	0-5V (Default)	Selects the mode.
			0-10V	
			0-20mA	
2	Filter measured value	Sets the averaging sampling count for the analog input value per channel. ※ Analog input values are sampled every 1 ms.	None (Default)	Selects the sampling count.
			2 times	
			4 times	
			8 times	
			16 times	
			64 times	

• Digital output module parameters (Target modules: YS9-D8S / YS9-D8S-M)

No	Parameter name	Definition	Setting value	Setting description
1	Output at communication error	Sets the digital output state per module when a communication error occurs. Follows the communication module's Hold/Clear switch setting; cannot be changed from the Support Software.	Clear (Default)	Turns the output off.
			Hold	Holds the output that was active when the communication error occurred.

• Analog output module parameters (Target module: YS9-A2S)

No	Parameter name	Definition	Setting value	Setting description
1	Output at communication error	Sets the analog output state per module when a communication error occurs. Follows the communication module's Hold/Clear switch setting; cannot be changed from the Support Software.	Clear (Default)	Turns the output off.
			Hold	Holds the output that was active when the communication error occurred.

No	Parameter name	Definition	Setting value	Setting description
2	Output mode	Sets the analog output mode (range) per channel.	0-5V (Default)	Selects the mode.
			0-10V	
			0-20mA	

※The setting of each parameter is retained even after the power is turned off.

After changing a setting, do not turn off the power for 1 second.

12-2 Recording of Parameters

Each parameter is recorded in the non-volatile memory inside the communication module.

As a result, parameters do not need to be reconfigured when a module is replaced — for example, due to a failure of an I/O expansion module.

12-3 Parameter Descriptions

12-3-1 Output At Communication Error

Purpose

Holds or clears the output state when a communication error is detected.

Examples

- Disconnection of the communication cable during communication with the PLC.
- Communication error due to emergency stop or similar event while the PLC is operating.
- Overcurrent detection in an I/O expansion module.

Target Modules

Communication module: YS9-B3 (valve output)

Digital output modules: YS9-D8S, YS9-D8S-M

Analog output module: YS9-A2S

12-3-2 Configuration Error Detection Mode

Purpose

Prevents unintended changes to the module configuration by recording the module configuration.

Details

When the configuration error detection mode is set to ON, the module configuration is recorded in non-volatile memory. From the next power-on onward, the recorded module configuration is compared with the actual module configuration, and an error is generated if they differ.

Target Module

Communication module: YS9-B3

12-3-3 On Delay Time

Purpose

When the contact state is unstable due to chattering or noise, this prevents data changes and stabilizes the input.

Details

Sets the input ON delay time. The input is treated as ON only when it remains ON for the configured time after first turning ON. The selectable input ON delay times are 100 μ s, 1 ms, 5 ms, 10 ms, and 20 ms.

Target Modules

Digital input modules: YS9-D8N, YS9-D8N-P

※Parameters can be configured per channel.

12-3-4 Filter Measured Value

Purpose

When the input value fluctuates and becomes unstable due to noise or similar factors, taking a moving average stabilizes the input value.

Details

Sets the sampling count for moving averaging of the analog input value. The configured number of samples is taken at 1 ms intervals, and the average of the sampled data is used as the analog input value. The selectable sampling counts are 1 (no moving averaging), 2, 4, 8, 16, and 64.

Target Module

Analog input module: YS9-A4N

※Configurable per channel.

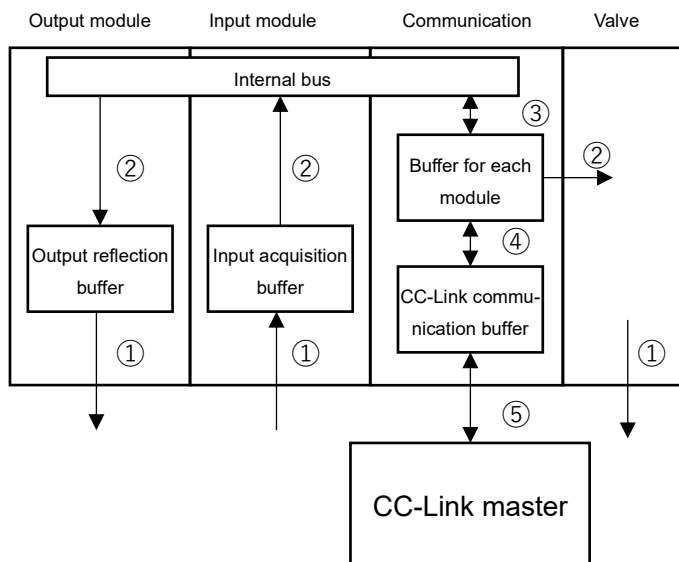
13 Response Time

This section explains the calculation method for the maximum response time of each module type, together with calculation examples.

13-1 Calculation Method

The maximum response time of each module is as follows.

Maximum response time = ① Maximum delay specific to the I/O module
 + ② Maximum I/O data processing time
 + ③ Maximum I/O data exchange time between modules
 + ④ Maximum I/O data exchange time with the CC-Link communication buffer
 + ⑤ Delay dependent on CC-Link settings and master station



① Maximum input delay specific to the I/O module

Input modules: varies depending on the input data sampling cycle and the various filter time settings.

- Digital input: Sampling cycle 100 μ s + delay due to the On delay time setting
- Analog input: Sampling cycle 1000 μ s + delay due to the filter measured value setting

Output modules: total of the maximum time required to apply the output data and the electrical delay until the set value is reached.

- Digital output module: 100 μ s
- Analog output module: 1400 μ s

Communication module (valve output): response time of valve ON/OFF switching.

- For details, refer to the Solenoid Valve F Series catalog.

② Maximum I/O data processing time

Input modules: maximum time required for input data to be applied to the internal bus.

Output modules: maximum time required to obtain output data from the internal bus.

Communication module (valve output): maximum time required to apply output data to the valves.

- 200 μ s regardless of module type

③ Maximum I/O data update time between modules

Maximum time required for I/O data exchange between the communication module and each module.

- $800 \mu\text{s} + (250 \mu\text{s} \times \text{number of I/O modules})$

④ Maximum I/O data exchange time with the CC-Link communication buffer

Cycle for data exchange between the CC-Link communication buffer in the communication module and each module's buffer.

- 500 μ s

⑤ Delay dependent on CC-Link settings and master station

Delay determined by the scan time, which depends on the number of stations connected to the CC-Link system, the types of stations connected, and on the I/O retrieval method of the CC-Link master. For details, refer to the manual of the CC-Link master in use.

13-1 Calculation Examples

Calculation examples of maximum response time for the configuration below are shown. Delays related to CC-Link communication are excluded from the calculation because they depend on the CC-Link settings and master station.

Equipment configuration

YS9-A2S	YS9-D8S-□	YS9-A4N	YS9-D8N-□	YS9-B3	Valve
Analog output	Digital output	Analog input	Digital input	Communica- tion Module	

Maximum input response time of the digital input module

$$= \textcircled{1} 100 \mu\text{s} + \text{delay due to input delay time setting} + \textcircled{2} 200 \mu\text{s} + \textcircled{3} 1800 \mu\text{s} + \textcircled{4} 500 \mu\text{s}$$

$$= 2600 \mu\text{s} + \alpha \text{ (delay due to on delay time setting)}$$

Maximum input response time of the analog input module

$$= \textcircled{1} 1000 \mu\text{s} + \text{delay due to averaging sampling count setting} + \textcircled{2} 200 \mu\text{s} + \textcircled{3} 1800 \mu\text{s} + \textcircled{4} 500 \mu\text{s}$$

$$= 3100 \mu\text{s} + \alpha \text{ (delay due to filter measured value setting)}$$

Maximum output response time of the digital output module

$$= \textcircled{1} 100 \mu\text{s} + \textcircled{2} 200 \mu\text{s} + \textcircled{3} 1800 \mu\text{s} + \textcircled{4} 500 \mu\text{s}$$

$$= 2600 \mu\text{s}$$

Maximum output response time of the analog output module

$$= \textcircled{1} 1400 \mu\text{s} + \textcircled{2} 200 \mu\text{s} + \textcircled{3} 1800 \mu\text{s} + \textcircled{4} 500 \mu\text{s}$$

$$= 3500 \mu\text{s}$$

Maximum output response time of the valves

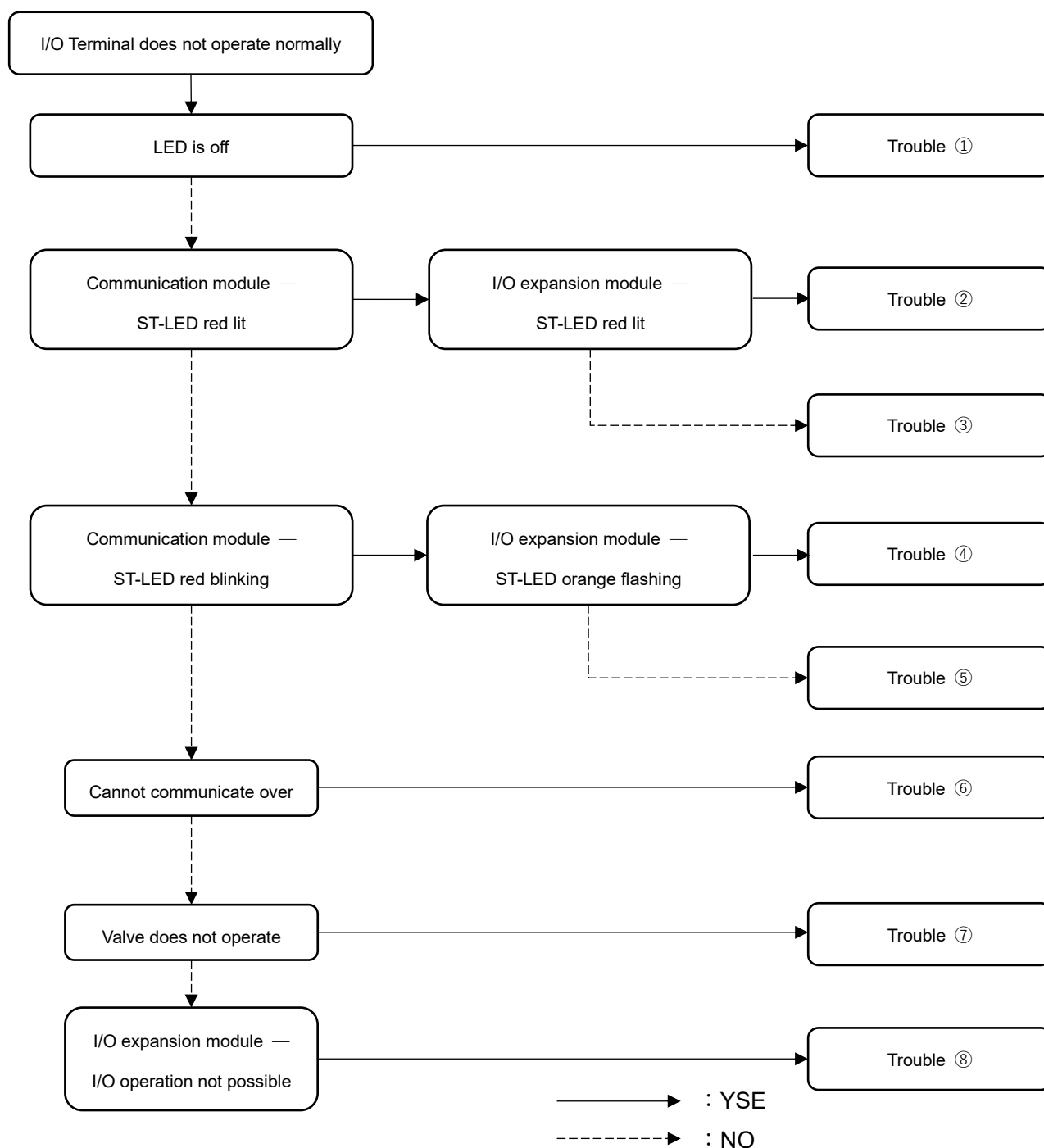
$$= \textcircled{1} \text{Valve ON/OFF switching response time} + \textcircled{2} 200 \mu\text{s} + \textcircled{4} 500 \mu\text{s}$$

$$= 700 \mu\text{s} + \alpha \text{ (valve ON/OFF switching response time)}$$

14 Troubleshooting

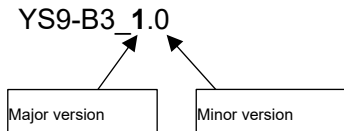
When a malfunction or other problem occurs, perform troubleshooting following the flowchart below. Detailed errors can be checked from the Support Software. For the procedure, refer to the HV054 YS9 Support Software User's Manual.

14-1 Troubleshooting Flowchart



14-2 Troubleshooting Methods

This section describes the estimated causes and corrective actions for the events corresponding to each trouble number.

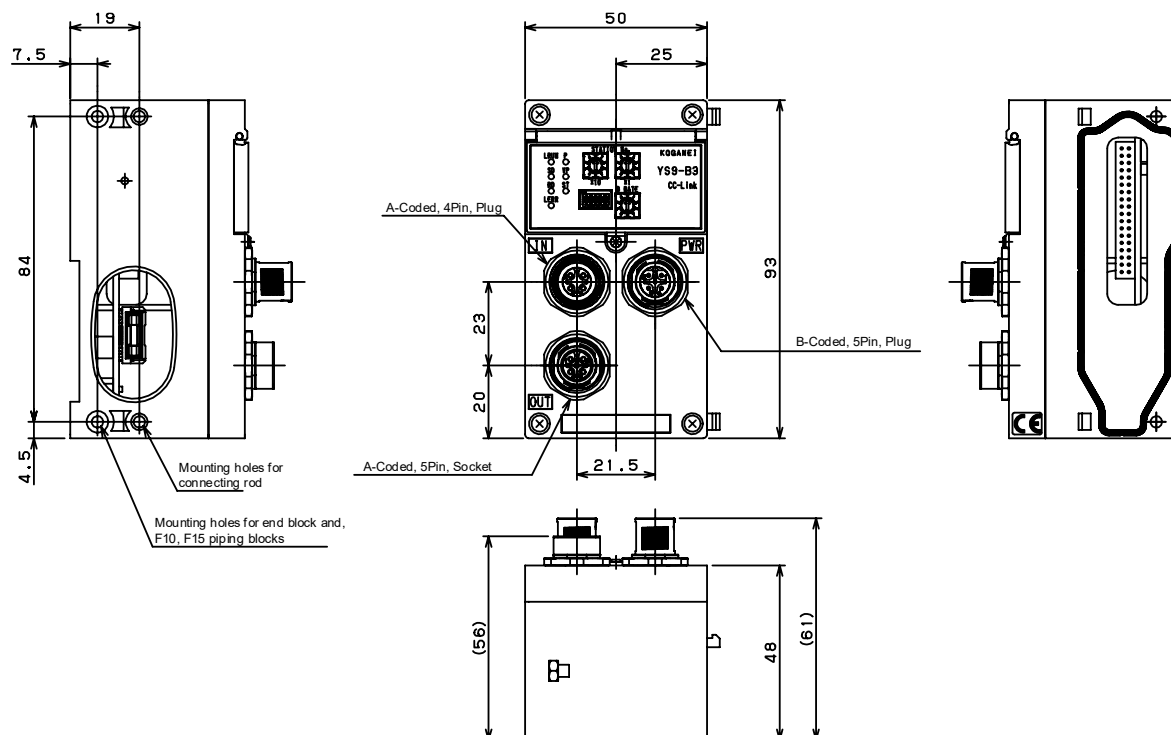
Trouble No.	Event	Estimated cause	Corrective action
①	LED is off	The unit power supply and the output power supply are not turned on.	Turn on the power.
		The power supply wiring is incorrect.	Review the wiring.
		The fuse is blown due to overcurrent or similar cause.	Replace the communication module.
②	Communication module ST: Red lit	Detected an increase or decrease in the number of connected modules.	Confirm that the left-side end block is firmly connected to the leftmost module and that there is no looseness between modules.
	I/O expansion module ST: Red lit		Do not add or remove modules while the unit is energized.
		Detected the occurrence of overcurrent.	Turn off the power and eliminate the cause of the overcurrent.
		Detected a communication error with the communication module.	Check whether there is any noise source around the I/O terminal.
		Detected a communication error with an internal IC in the module.	Check whether there is any noise source around the I/O terminal.
③	Communication module ST: Red lit	An I/O expansion module with a major version different from that of the communication module is connected.	Check the model code on the bottom of each module and remove any module whose major version differs from that of the communication module. The module version is indicated by the last two digits of the model code. YS9-B3 1.0 

Trouble No.	Event	Estimated cause	Corrective action
③	Communication module ST: Red lit	Detected an increase or decrease in the number of connected modules.	Confirm that the left-side end block is firmly connected to the leftmost module and that there is no looseness between modules.
			Do not add or remove modules while the unit is energized.
		An error occurred during a read/write operation on the non-volatile memory.	Check whether there is any noise source around the I/O terminal.
		The number of connected I/O expansion modules exceeds the specification.	The maximum number of I/O expansion modules that can be connected to the communication module is 8. Adjust the number of I/O expansion modules so that there are 8 or fewer.
		The module configuration was changed while the configuration mismatch detection mode was ON.	Return the module configuration to the one used when the configuration mismatch detection mode was set to ON. Set the configuration mismatch detection mode to OFF.
④	Communication module ST: Red blinking I/O expansion module ST: Orange blinking	The I/O expansion module has not been I/O-allocated.	Change the number-of-occupied-stations setting on the communication module so that the relevant module is included in the I/O allocation.
⑤	Communication module ST: Red blinking	The number-of-occupied-stations setting switch was changed while the unit was energized.	Return the number-of-occupied-stations setting to the value used at power-on.
		The Hold/Clear switch was changed while the unit was energized.	Return the Hold/Clear setting to the value used at power-on.
⑥	Communication module L RUN: Off L ERR: Off RD: Indeterminate SD: Indeterminate	There is a problem with the CC-Link settings. There is a problem with the wiring.	Match the CC-Link settings (communication speed, station number, number of occupied stations) with those of the master station. Connect terminating resistors at both ends of the CC-Link network. Review the cable length.

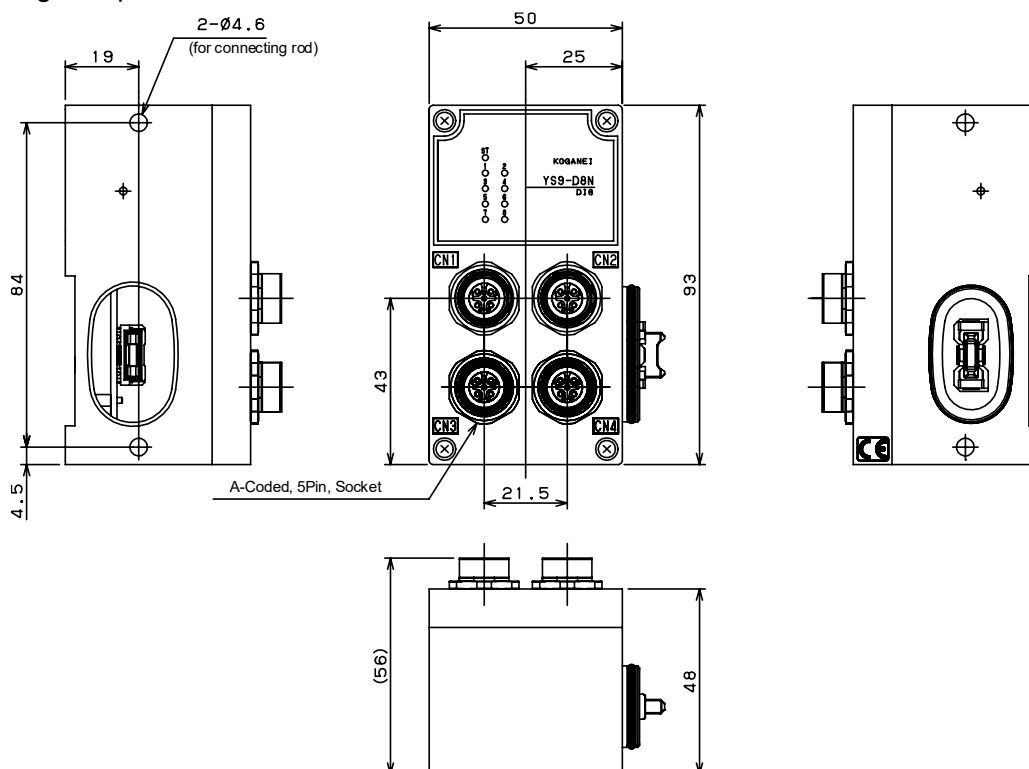
Trouble No.	Event	Estimated cause	Corrective action
⑥	Communication module L RUN: Off L ERR: Red lit RD: Green lit SD: Off	The station-number setting switch is set out of range.	Turn off the power, set the station number within range, and then turn the power back on.
	Communication module L RUN: Off L ERR: Red lit RD: Off SD: Off	The baud-rate setting switch is set out of range.	Turn off the power, set the baud-rate setting switch within range, and then turn the power back on.
⑦	The valve does not operate	The output power supply is not turned on.	Turn on the output power supply.
		The PLC is in the Stop state.	Change the PLC to the Run state.
		Valves Ch.17 to Ch.32 are not I/O-allocated.	When the number of occupied stations is 1, only valves up to Ch.16 can be I/O-allocated due to CC-Link restrictions. To use valves Ch.17 to Ch.32, set the number of occupied stations to 2 or more.
		The valve is faulty.	Replace the valve.
⑧	I/O expansion module — I/O operation cannot be performed	The output power supply is not turned on.	Turn on the output power supply.
		The PLC is in the Stop state.	Change the PLC to the Run state.
		The fuse of a module that cannot perform I/O operations is blown due to overcurrent or similar cause.	Replace the relevant module.

15 External Dimensions

Communication module YS9-B3

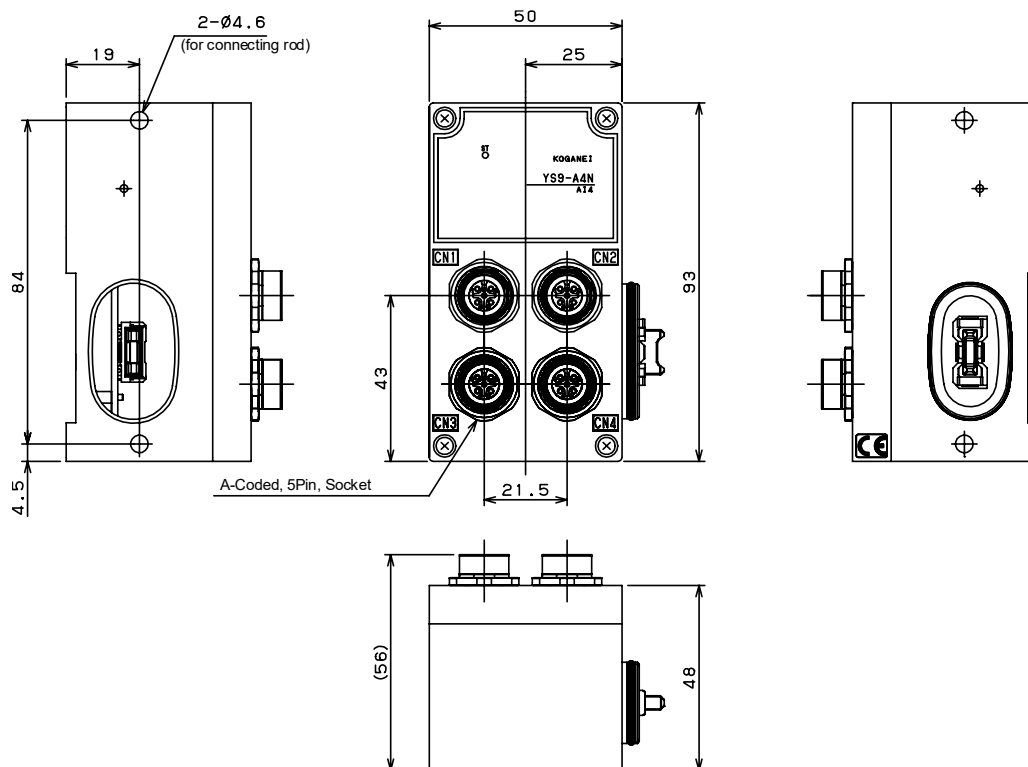


Digital input module YS9-D8N / YS9-D8N-P

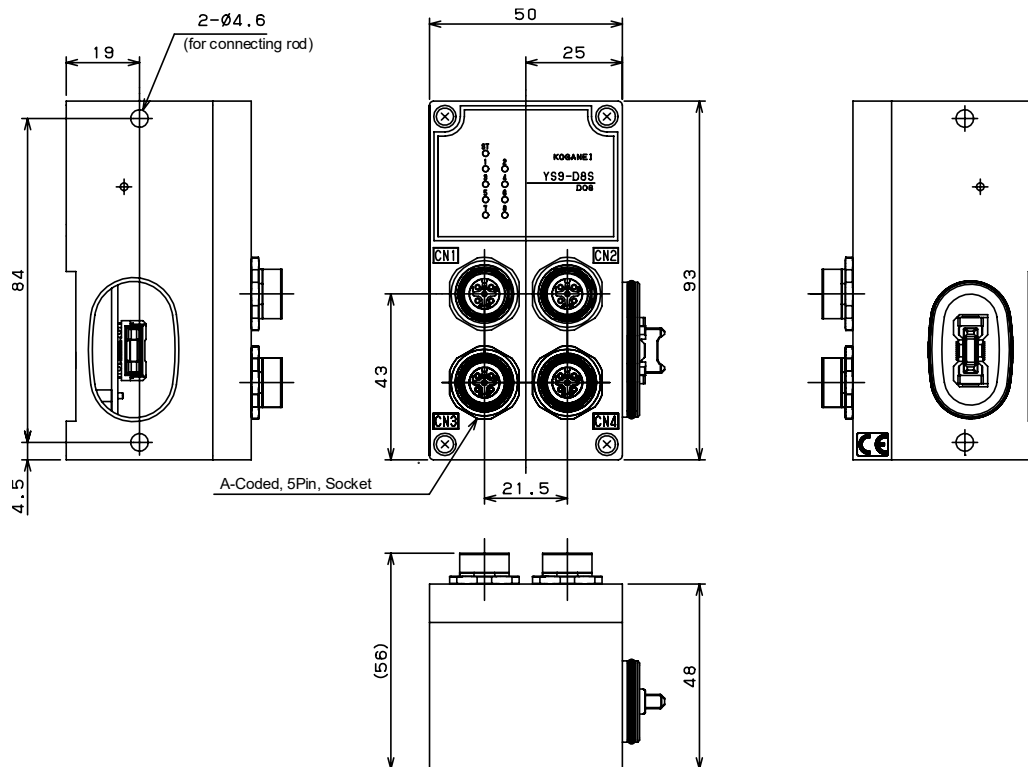


※ YS9-D8N-P differs only in the name shown on the label, so only YS9-D8N is described.

Analog input module YS9-A4N

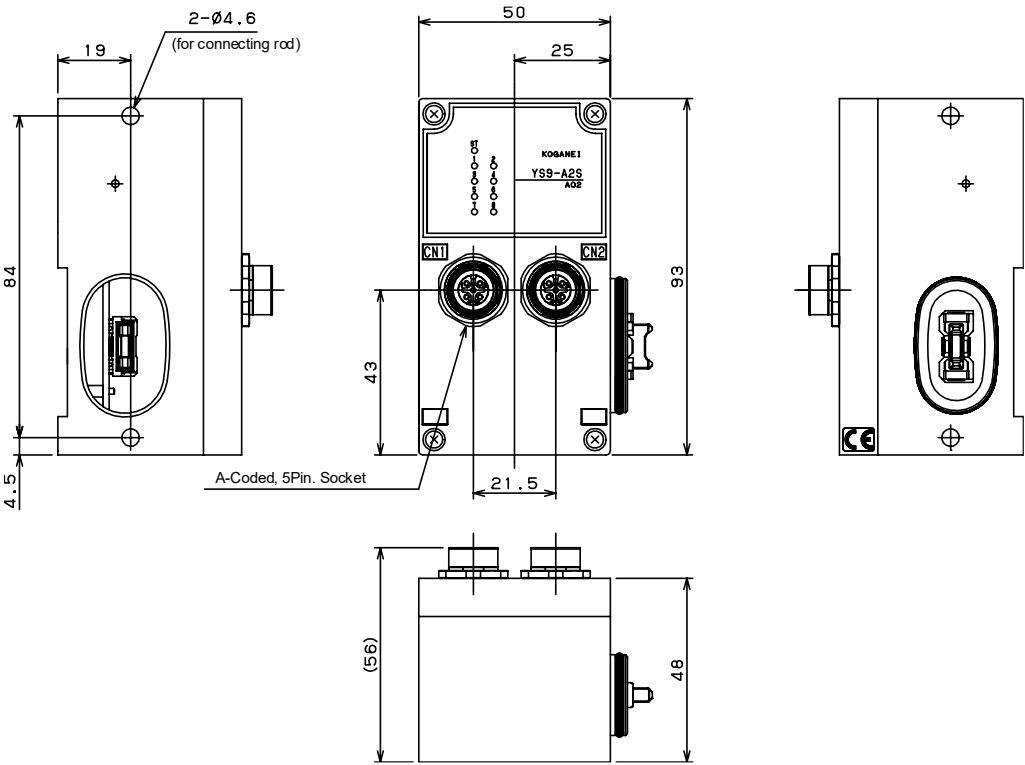


Digital output module YS9-D8S / YS9-D8S-M

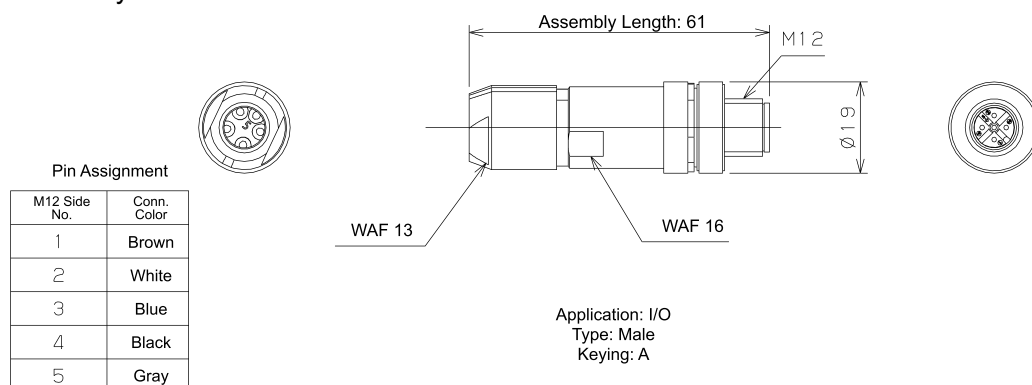


※ YS9-D8S-M differs only in the name shown on the label, so only YS9-D8S is described.

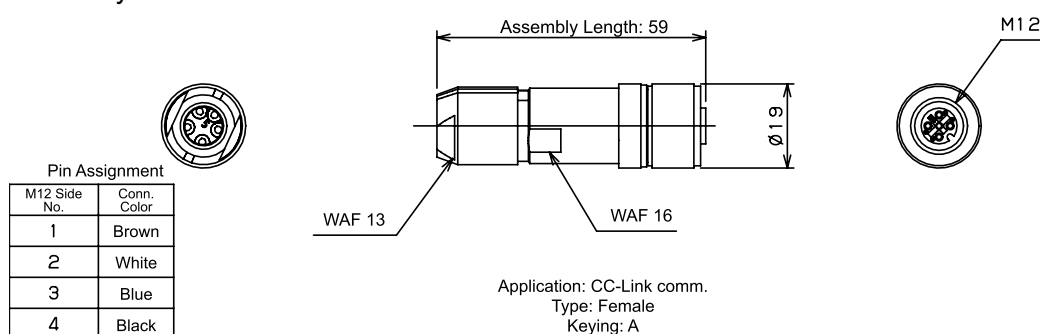
Analog output module YS9-A2S



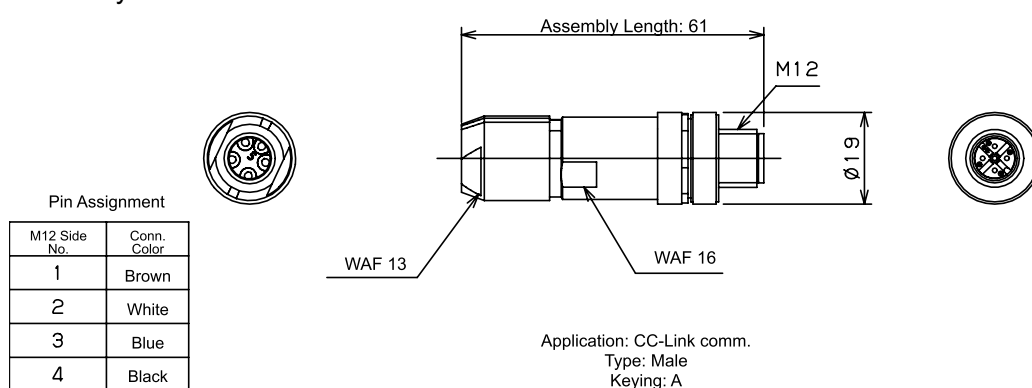
Assembly Connector YS9Z-CNIO: M12 Male for I/O Module



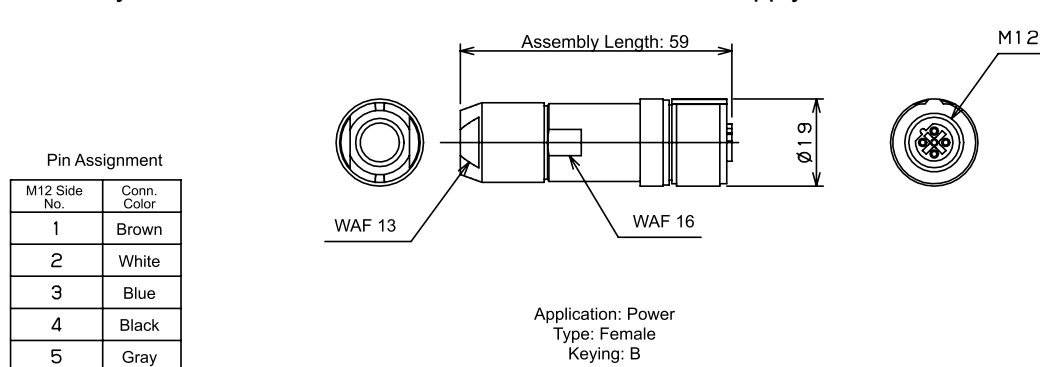
Assembly Connector YS9Z-CNCCF: M12 Female for CC-Link In



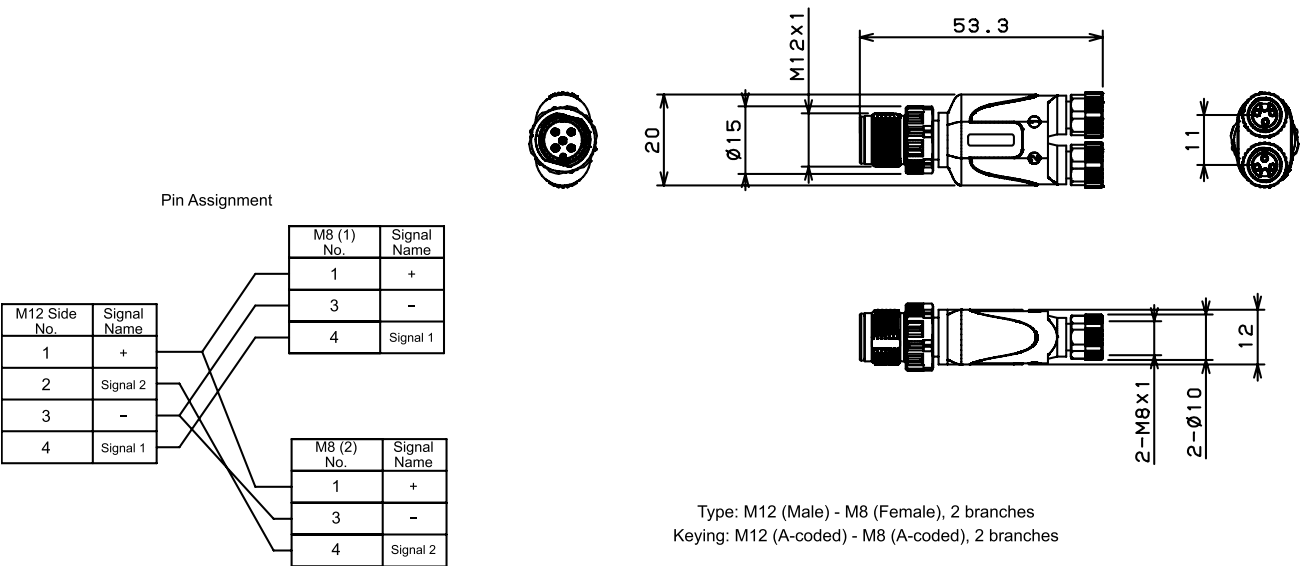
Assembly Connector YS9Z-CNCCM: M12 Male for CC-Link Out



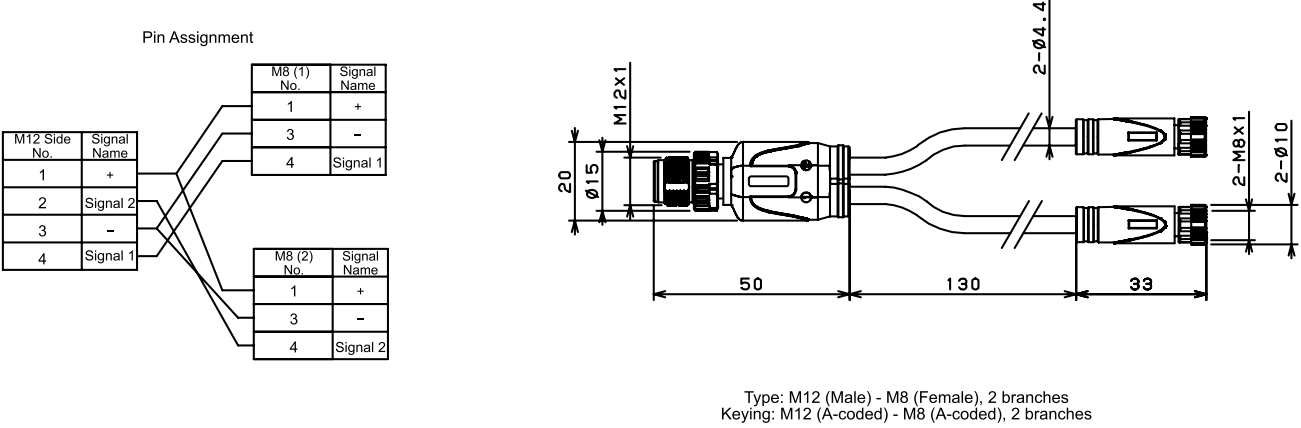
Assembly Connector YS9Z-CNP: M12 Female for Power Supply



Connector Converter YS9Z-CVA: M12-M8 Integrated Branch Type



Connector Converter YS9Z-CVB: M 12-M8 Branch Type with 130 mm Cable



*For other information, detailed specifications, and precautions,
see the product catalog.

*For inquiries about the product, contact your nearest Koganei
sales office or the Overseas Group noted below.



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