CKD

SM-272367-A/9

INSTRUCTION MANUAL

BLOCK MANIFOLD

MN3E･MN4E SERIES

- Please read this instruction manual carefully before using this product, particularly the section describing safety.
- Retain this instruction manual with the product for further consultation whenever necessary.

CKD Corporation

For Safety Use

To use this product safety, basic knowledge of pneumatic equipment, including materials, piping, electrical system and mechanism, is required (ISO 4414 *1, JIS B 8370 *2).

We do not bear any responsibility for accidents caused by any person without such knowledge or arising from improper operation.

Our customers use this product for a very wide range of applications, and we cannot keep track of all of them. Depending on operating conditions, the product may fail to operate to maximum performance, or cause an accident. Thus, before placing an order, examine whether the product meets your application, requirements, and how to use it.

This product incorporates many functions and mechanisms to ensure safety. However, improper operation could result in an accident. To prevent such accidents, **read this operation manual carefully for proper operation.**

Observe the cautions on handling described in this manual, as well as the following instructions:

⚠ **DANGER** : Failure to pay attention to DANGER notices may cause a situation that results in a fatality or serious injury and that requires urgent addressing.

⚠ **WARNING** : Failure to pay attention to WARNING notices may result in a fatality or serious injury.

⚠ **CAUTION** : Failure to pay attention to WARNING notices may result in injury or damage to equipment or facilities.

*1) ISO 4414 : Pneumatic fluid power ··· Recommendations for the application of equipment to transmission and control systems.

*2) JIS B 8370 : General rule for pneumatic systems

UNPACKING (Chapter 3.)

CAUTION : Bags containing solenoid valves should be opened only when you are ready to connect the valves to the pipes immediately afterward.

- If bags are opened before the valves are ready to be connected to the pipes, the entry of foreign matter from the piping ports could cause the solenoid valves to fail or malfunction.

INSTALLATION (Chapter 4.)

CAUTION : If you have to use the product under conditions that are different from the specified conditions or if you intend to use the product for a special application, be sure to consult us about the product specifications before using the product.

ENVIRONMENT (Section 4.1)

CAUTION :

a) In a dusty environment, foreign matter may enter even through the exhaust port.
- The movement of the exhaust valve causes a respiratory action at the exhaust valve, which may cause inhalation of foreign matter near the exhaust port. This potential situation would be worse if the exhaust port is facing upward. Attach a silencer to the exhaust port or have the exhaust port face downward.

b) Keep the solenoid valve system dry. Take care to avoid direct contact with dripping water or splashes of cutting oil.
- If the solenoid valve system is wet by a direct contact with water or cutting oil, an electrical leak or burnt solenoid coils may result. Protect the solenoid valve system by using a cover or by installing it inside a paneled casing. If the cylinder rod is splashed with cutting oil, the oil may penetrate through the cylinder into the secondary side piping of the solenoid valve. This must be prevented to avoid malfunctions. Consult us for preventive measures.

c) The coils will produce heat.
- Particularly if the solenoid valve system is installed in a control board or if the solenoid coils need to be energized for a long time, consider providing sufficient ventilation to release the heat. The coils can get very hot.

d) Do not use the solenoid valve system in an atmosphere that includes a corrosive gas or solvent vapors.
- Do not use the solenoid valve system in an atmosphere that includes a corrosive gas such as the sulfur dioxide gas or in an atmosphere that includes solvent vapors.

e) Vibrations and shocks
- Do not subject the solenoid valve system to vibrations $50m/s^2$ or stronger or shocks $300m/s^2$ or stronger.

f) Avoid using the solenoid valve system in a humid environment because the humidity is likely to cause condensation with a change in the temperature.

g) Do not use the normal type solenoid valves for an application that requires conformity with explosion-proof specifications. Choose explosion-proof solenoid valves instead.

h) The packing and gaskets may deteriorate sooner than usual if used in an atmosphere with a higher than normal density of ozone (for example, the atmosphere near a beach or in an area with frequent thunderstorms).
- Consult us for the packing and gaskets to be used in an atmosphere with a higher ozone density.

INSTALLATION (Section 4.2)

⚠ WARNING : When installing a solenoid valve unit, never attempt to hold it in position by means of the pipes connected to it.

- Mount the solenoid valve by applying the mounting screws and/or mounting plate to the solenoid valve.

⚠ CAUTION : If you choose to mount the solenoid valve manifold on a DIN rail, make sure that the DIN rail is strong enough.

PIPING (Section 4.3)

⚠ CAUTION :

a) Observe the recommended tightening torque when connecting pipes.
- Observing the recommended tightening torque prevents air leakage and damage to the screw threads. To prevent damage to the screw threads, first use your hand to lightly tighten the screw and then use a tool to tighten the screw to the recommended torque.

b) Make sure that the pipes will not be disconnected at the joints by mechanical movements, vibrations or tension.
- If the exhaust piping of the pneumatic circuit is disconnected, the actuator speed control is disabled.
- If the above happens to a chuck holding mechanism, the chuck will open. The inadvertent opening of the chuck may cause a serious accident.

c) When supplying the compressed air for the first time after completing the piping, be sure to check every joint in the piping for air leakage.

d) When supplying the compressed air for the first time after completing the piping, increase the air pressure gradually but never introduce a highly-pressurized air suddenly.
- A sudden introduction of a highly-pressurized air may disconnect pipes at joints and/or cause the tubes to jump around, any of which may cause an injury.

e) Do not decrease the inside diameter of the piping from any of the solenoid valve exhaust ports to a diameter less than the exhaust pipe connecting port size.
- Normal operation of the actuator depends on the smoothness of the exhaust flow. With a manifold system, a restriction to the exhaust flow may prevent normal operation of other solenoid valves.

f) Removal of foreign matter
- Rust and other foreign matter in the pneumatic circuit may cause a malfunction or leakage from the valve seat. Insert a filter (maximum allowable particle size 5 μ m or less) immediately upstream of the solenoid valve.

g) Air supply
- Do not restrict the flow of air through the air supply piping. With a manifold system with multiple stations, a drop in the air supply pressure may cause trouble through a delay in the operation timing.

WIRING (Section 4.4)

⚠ CAUTION : Before supplying the power, check the power supply voltage and the current type (AC or DC).

MANUAL OVERRIDE (Section 5.2)

⚠ WARNING :

a) After using the manual override, be sure to reset the manual override to the original (OFF) position before resuming the operation of the device.
After a operation, be sure to release the lock to turn the manual override OFF.
With the 4E-Series solenoid valve system, the lock is released (the manual override turned OFF) if the manual override protection cover is closed.

b) Before using the manual override, make sure that nobody is present near the cylinder to be activated.

AIR QUALITY (Section 5.3)

⚠ WARNING :

a) Do not supply anything other than compressed air.

b) Supply clean compressed air without any mixture of corrosive gas.

⚠ CAUTION :

a) Compressed air usually contains a large amount of drain, oxidized oil, tar, foreign matter, and rust from the piping. Filter out those elements in the supplied air because they may cause a malfunction and decrease service life. In addition, clean the exhaust before it is released to the air to minimize pollution.

b) Once you have lubricated a pre-lubricated valve, the valve is no longer capable of running without being lubricated from the outside. Do not leave the valve without lubrication but keep it lubricated.

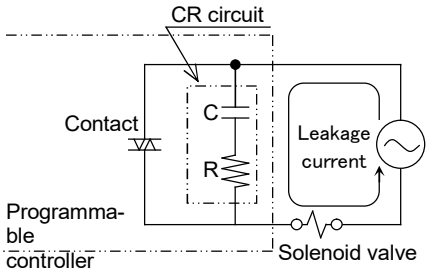
c) Do not use spindle oil or machine oil. They may induce expansion of the rubber parts, which may cause a malfunction.

ELECTRIC CIRCUITS (Section 5.4)

⚠ CAUTION :

a) Check for the presence of any current leak from the external control device because it may cause an erroneous valve operation.
- When a programmable controller or a similar control device is used, a current leak may prevent the normal returning of the valve when the solenoid is de-energized.

b) Restriction on current leak
- When controlling solenoid valves using a programmable controller or a similar control device, make sure that the current leak in the programmable controller output is equal to or less than the level shown in the table below. A current leak larger than the allowable level may cause an erroneous valve operation.



12V DC	1.5 mA or lower
24V DC	1.8 mA or lower

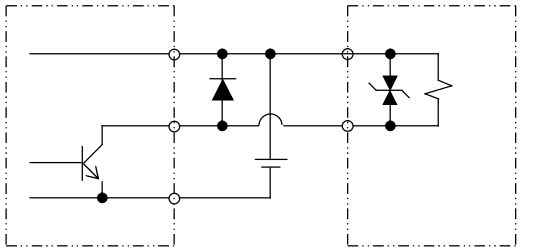
⚠ CAUTION :

a) The surge suppressor limits the surge voltage generating from the solenoid valve, which reaches several hundred volts, to a low voltage level bearable for output contacts. This function may be insufficient for some output circuits and the voltage may cause breakage or malfunction. Check the surge voltage limitation level of the solenoid valve in your circuit, the dielectric voltage and circuit configuration of the output devices and the delay for recovery to check for serviceability. If necessary, install another measures against surges. The 4E Series solenoid valves equipped with a surge suppressor suppress the terminal-to-terminal reverse voltage surge generating upon shutoff, to the level shown in the table below.

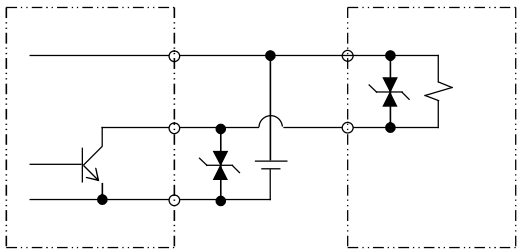
In case of 12VDC	About 27V
In case of 24VDC	About 47V

b) If the output unit is of an NPN type, the output transistor is susceptible to the sum of the voltage specified in the table above and the source voltage. Install a contact protection circuit.

<Example 1 of output transistor protection circuit>



<Example 2 of output transistor protection circuit>



PERIODIC INSPECTION (Section 6.1)

⚠ WARNING :

Before providing a maintenance service, cut the power and the supply of compressed air and confirm the absence of residual pressure.

- The above is required to ensure safety.

⚠ CAUTION :

Regularly perform the daily and periodic inspections to correctly maintain product performance.

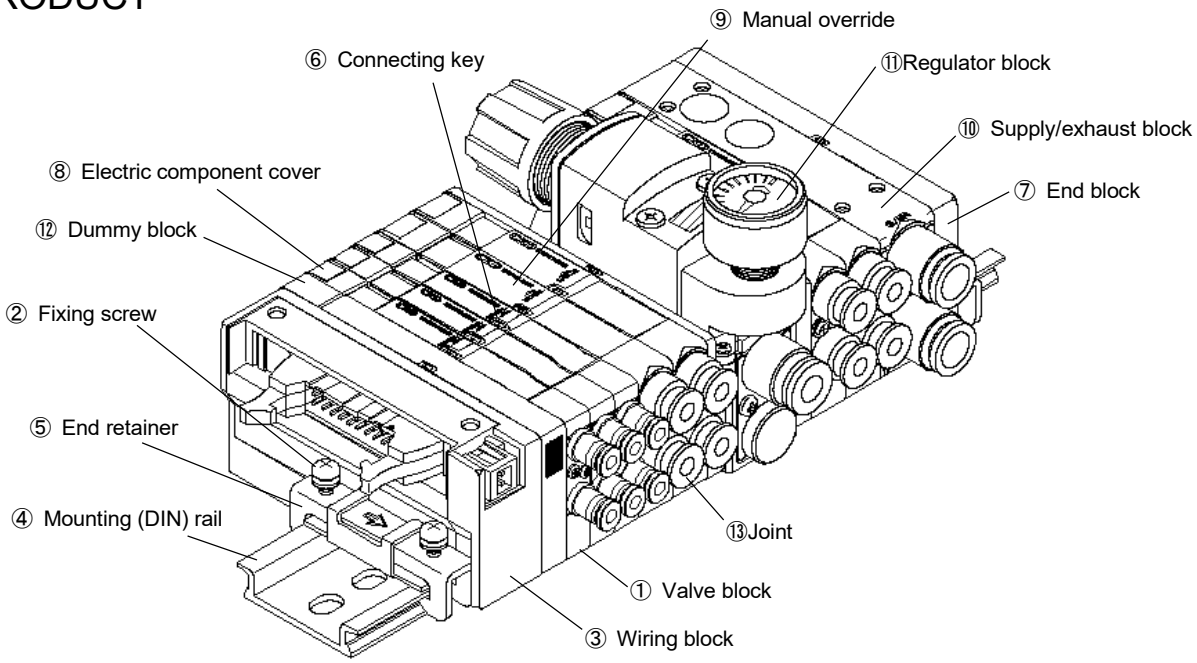
- If the product is not correctly maintained , product performance may deteriorate dramatically, resulting in a shorter service life, fractures of components, and malfunctions.

INDEX

Block Manifold
MN3E･MN4E Series
Manual No. SM-272367-A

Created 2002.04.22
Revised 2013.09.30

1. PRODUCT



① Valve block

② Fixing screw
There are two fixing screw for wiring blocks and end blocks, securing the entire manifold to the DIN rail.

③ Wiring block
The block has a built-in printed circuit board.

④ Mounting (DIN) rail

⑤ End retainer
It is temporarily fixed to the wiring block and the end block.

⑥ Connecting key
The key should be flat with other blocks in after the connection of the block and the end block.

⑦ End block
Located opposite the wiring block, the end block secures the entire manifold to the DIN rail. It has a function of common supply/exhaust flow plugging.

⑧ Electric component cover
The electricity indicator lamp comes on inside the white frame when the solenoid is energized. The “a” solenoid and the “b” solenoid are red and green, respectively, when they are lighted.

⑨ Manual override
The protection cover prevents accidental operation of the manual override.
The user must open the cover before operating the manual override.

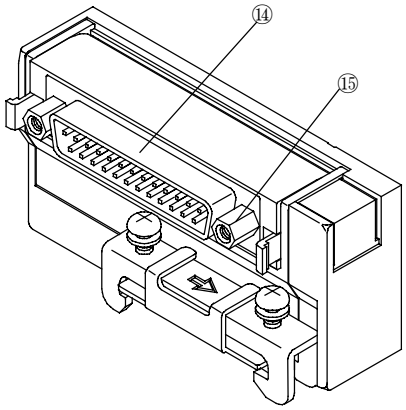
⑩ Supply/exhaust block

⑪ Regulator block.

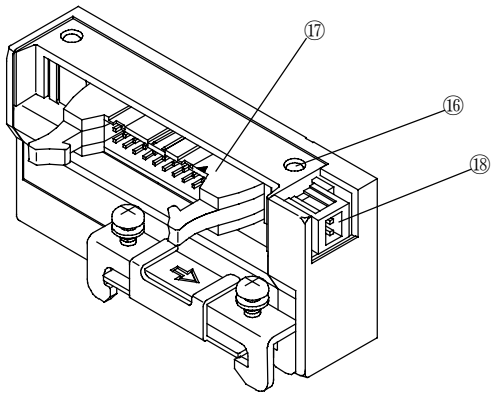
⑫ Dummy block.

⑬ Joint
The joint is a replaceable cartridge push-in type.

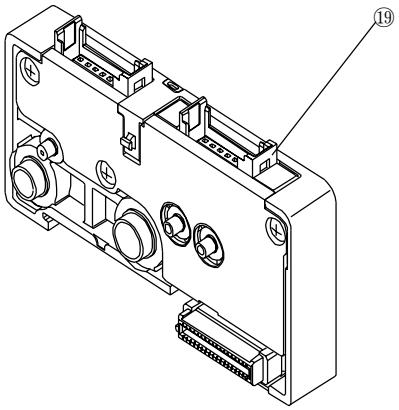
● D sub-connector type (T30/T30R)



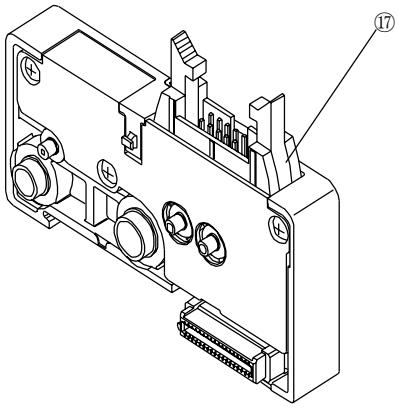
● Flat cable type (T5*/T5*R)



● Intermediate wiring block, RITS connector type (TM1*)



● Intermediate wiring block, flat cable type (TM52)



⑭ D-sub 25-pin connector
Control terminals of the manifold solenoid valve are integrated.

⑮ Fixing screw
The screw is used to secure the connectors

⑯ Power indicator lamp
The lamp comes on when the power is on with the correct polarity.

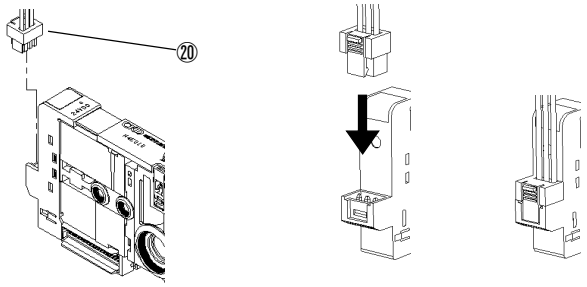
⑰ Flat cable connector
A common connector for the control terminals of the manifold electromagnetic valve.

⑱ Power terminal stand (only T50 type)
The stand is used when it is necessary to obtain power from outside.

⑲ RITS connector
Control terminals of the manifold solenoid valve are integrated.

* For details of manifold configuration, refer to page 64 and the following pages.

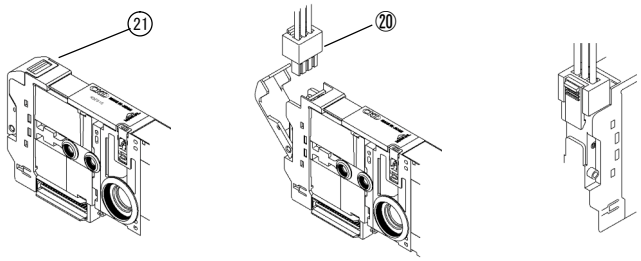
● Individual wiring type



⑳ Power supply socket ass'y
The power supply socket supplies individual power to the valve. The internal circuit of the individual wiring valve block is completely isolated from the reduced wiring electric circuit inside the manifold. Therefore insertion of an individual wiring valve block between reduced wiring valve blocks does not cause a change in the pin layout of the wiring block related to the reduced wiring valve block.

* Individual inputs from a separate system can be added independently of integral wiring of the reduced wiring system.

● Type with built-in individual power supply (AUX) function

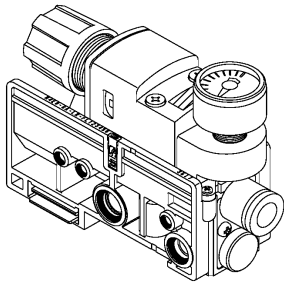


㉑ Electric cover AUX
The cover is equipped with an individual power supply terminal.
⑳ Power supply socket ass'y
The socket supplies individual power to the valve. When the socket is inserted, the power sent to the socket insertion valve from the reduced wiring system is cut off.

* The model with a built-in individual power supply (AUX) function is capable of individual control of arbitrary valves with the separate power supply in the manifold having been connected with a reduced wiring system. It is effective for adjustment of equipment.

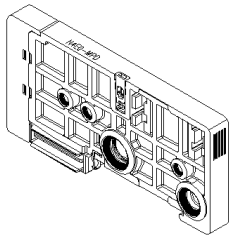
● Regulator block

The main pressure supplied by supply/exhaust block can be decompressed.
The pressure directly supplied from the outside of manifold can be decompressed. It can be used as main pressure.



● Dummy block

These are mounted when later addition of valves is planned, etc.



2. INTERNATIONAL SYSTEM OF UNITS (SI) AND PORT INDICATION

2.1 Port Indication

Each piping port is marked with ISO and JIS conformable piping port indication codes like 1P and 4A.

Application	ISO	JIS
Supply port	1	P
Output port	4	A
Output port	2	B
Exhaust port	5	R1
Exhaust port	3	R2

2.2 Conversion between International System of Units (SI) and Conventional Units

In this manual, values are expressed using the International System of Units (SI).
Use the table below to convert them into values expressed in conventional units.

Table of conversion between SI units and conventional units
(The values printed in Bolds fonts are values given in the International System of Units (SI)):

Example (converting a pressure value):
1kgf/cm^2 → **0.980665Mpa** **1MPa** → 1.01972×10kgf/cm^2

- Force

N	dyn	kgf
1	1×10^{5}	1.01972×10^{-1}
1×10^{-5}	1	1.01972×10^{-6}
9.80665	9.80665×10^{5}	1

- Stress

Pa or N/m^2	Mpa or N/mm^2	kgf/mm^2	kgf/cm^2
1	1×10^{-6}	1.01972×10^{-7}	1.01972×10^{-5}
1×10^{6}	1	1.01972×10^{-1}	1.01972×10
9.80665×10^{6}	9.80665	1	1×10^{2}
9.80665×10^{4}	9.80665×10^{-2}	1×10^{-2}	1

Note: 1Pa=1N/m^2, 1MPa=1N/mm^2

- Pressure

Pa	kPa	MPa	bar	kgf/cm^2	atm	mmH2O	mmHg 又 Torr
1	1×10^{-3}	1×10^{-6}	1×10^{-5}	1.01972×10^{-5}	9.86923×10^{-6}	1.01972×10^{-1}	7.50062×10^{-3}
1×10^{3}	1	1×10^{-3}	1×10^{-2}	1.01972×10^{-2}	9.86923×10^{-3}	1.01972×10^{2}	7.50062
1×10^{6}	1×10^{3}	1	1×10	1.01972×10	9.86923	1.01972×10^{5}	7.50062×10^{3}
1×10^{5}	1×10^{2}	1×10^{-1}	1	1.01972	9.86923×10^{-1}	1.01972×10^{4}	7.50062×10^{2}
9.80665×10^{4}	9.80665×10	9.80665×10^{-2}	9.80665×10^{-1}	1	9.67841×10^{-1}	1×10^{4}	7.35559×10^{2}
1.01325×10^{5}	1.01325×10^{2}	1.01325×10^{-1}	1.01325	1.01323	1	1.03323×10^{4}	7.60000×10^{2}
9.80665	9.80665×10^{-3}	9.80665×10^{-6}	9.80665×10^{-5}	1×10^{-4}	9.67841×10^{-5}	1	7.35559×10^{-2}
1.33322×10^{2}	1.33322×10^{-1}	1.33322×10^{-4}	1.33322×10^{-3}	1.35951×10^{-3}	1.31579×10^{-3}	1.35951×10	1

Note: 1Pa=1N/m^2

3. UNPACKING

⚠ CAUTION : Bags containing solenoid valves should be opened only when you are ready to connect the valves to the pipes immediately afterward.
- If bags are opened before the valves are ready to be connected to the pipes, the entry of foreign matter from the piping ports could cause the solenoid valves to fail or malfunction.

a) Check the model number imprinted on the product to make sure that the product you received is exactly the product you ordered.

b) Check the exterior of the product for any damage.

c) Before using the product, read the supplied documentation.

4. INSTALLATION

⚠ WARNING : If you have to use the product under conditions that are different from the specified conditions or if you intend to use the product for a special application, be sure to consult us about the product specifications before using the product.

4.1 Environment

⚠ CAUTION :

a) In a dusty environment, foreign matter may enter even through the exhaust port.
- The movement of the exhaust valve causes a respiratory action at the exhaust valve, which may cause inhalation of foreign matter near the exhaust port. This potential situation would be worse if the exhaust port is facing upward. Attach a silencer to the exhaust port or have the exhaust port face downward.

b) Keep the solenoid valve system dry. Take care to avoid direct contact with dripping water or splashes of cutting oil.
- If the solenoid valve system is wet by a direct contact with water or cutting oil, an electrical leak or burnt solenoid coils may result. Protect the solenoid valve system by using a cover or by installing it inside a paneled casing. If the cylinder rod is splashed with cutting oil, the oil may penetrate through the cylinder into the secondary side piping of the solenoid valve. This must be prevented to avoid malfunctions. Consult us for preventive measures.

c) The coils will produce heat.
- Particularly if the solenoid valve system is installed in a control board or if the solenoid coils need to be energized for a long time, consider providing sufficient ventilation to release the heat. The coils can get very hot.

d) Do not use the solenoid valve system in an atmosphere that includes a corrosive gas or solvent vapors.
- Do not use the solenoid valve system in an atmosphere that includes a corrosive gas such as the sulfur dioxide gas or in an atmosphere that includes solvent vapors.

e) Vibrations and shocks
- Do not subject the solenoid valve system to vibrations 50m/s^2 or stronger or shocks 300m/s^2 or stronger.

f) Avoid using the solenoid valve system in a humid environment because the humidity is likely to cause condensation with a change in the temperature.

g) Do not use the normal type solenoid valves for an application that requires conformity with explosion-proof specifications. Choose explosion-proof solenoid valves instead.

h) The packing and gaskets may deteriorate sooner than usual if used in an atmosphere with a higher than normal density of ozone (for example, the atmosphere near a beach or in an area with frequent thunderstorms).
- Consult us for the packing and gaskets to be used in an atmosphere with a higher ozone density.

4.2 Installation

⚠ WARNING : When installing a solenoid valve unit, never attempt to hold it in position by means of the pipes connected to it.
- Mount the solenoid valve by applying the mounting screws and/or mounting plate to the solenoid valve.

⚠ CAUTION : If you choose to mount the solenoid valve manifold on a DIN rail, make sure that the DIN rail is strong enough.

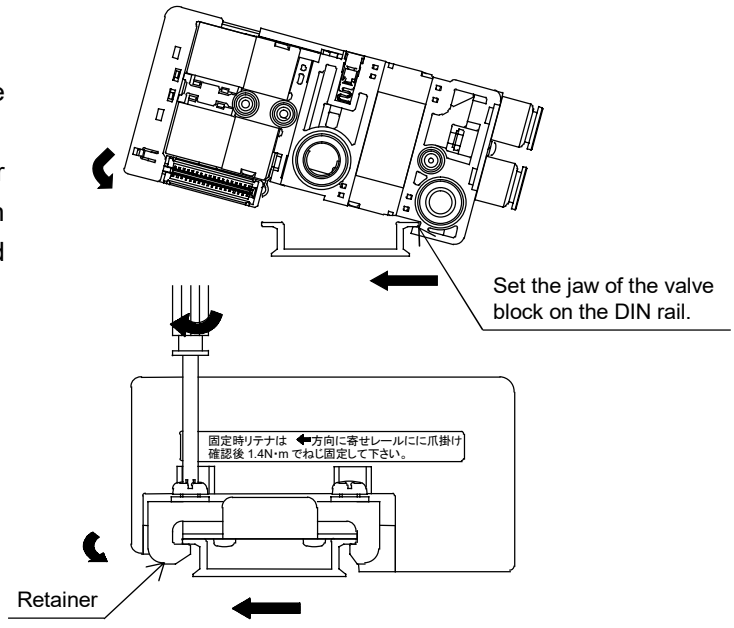
4.2.1 A work space for installation, removal, wiring, and piping operations should be provided around the installed solenoid valve system.

4.2.2 Installation using

Note, however, that if the system is not properly mounted to the DIN rail it may fall and break the manifold. If the manifold is to be used in an environment where it can be subjected to vibrations and shocks, secure the DIN rail to the mounting surface by applying screws at intervals of 50 mm, and check that it is securely mounted before using the manifold.

- Installation using a DIN rail
  MN4E Series

Set the jaw of the retainer on the DIN rail.
While holding down the retainer to eliminate the gap between blocks, press the retainer toward the direction of arrow.
Tighten the DIN rail set screw.
Tightening torque:
1.4±0.2N･m



4.3 Piping

⚠ CAUTION :

a) Observe the recommended tightening torque when connecting pipes.
- Observing the recommended tightening torque prevents air leakage and damage to the screw threads. To prevent damage to the screw threads, first use your hand to lightly tighten the screw and then use a tool to tighten the screw to the recommended torque.

b) Make sure that the pipes will not be disconnected at the joints by mechanical movements, vibrations or tension.
- If the exhaust piping of the pneumatic circuit is disconnected, the actuator speed control is disabled.
- If the above happens to a chuck holding mechanism, the chuck will open. The inadvertent opening of the chuck may cause a serious accident.

c) When supplying the compressed air for the first time after completing the piping, be sure to check every joint in the piping for air leakage.

d) When supplying the compressed air for the first time after completing the piping, increase the air pressure gradually but never introduce a highly-pressurized air suddenly.
- A sudden introduction of a highly-pressurized air may disconnect pipes at joints and/or cause the tubes to jump around, any of which may cause an injury.

e) Do not decrease the inside diameter of the piping from any of the solenoid valve exhaust ports to a diameter less than the exhaust pipe connecting port size.
- Normal operation of the actuator depends on the smoothness of the exhaust flow. With a manifold system, a restriction to the exhaust flow may prevent normal operation of other solenoid valves.

f) Removal of foreign matter
- Rust and other foreign matter in the pneumatic circuit may cause a malfunction or leakage from the valve seat. Insert a filter (maximum allowable particle size 5 μ m or less) immediately upstream of the solenoid valve.

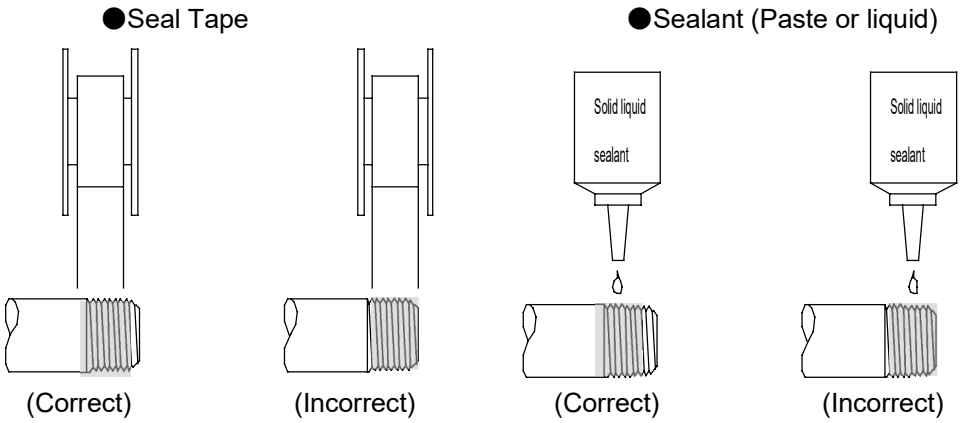
g) Air supply
- Do not restrict the flow of air through the air supply piping. With a manifold system with multiple stations, a drop in the air supply pressure may cause trouble through a delay in the operation timing.

Tightening torque

Joint screw	Tightening torque N·m
M3	0.3 to 0.6
M5	1.0 to 1.5
Rc1/8	3 to 5

4.3.1 Seal material

When using seal material, take care to avoid getting it in the pipes or overflowing on the exterior surface of the pipes.



When applying fluororesin sealing tape to the screw threads, wind the tape two or three times around the threads but leave the one or two threads at the pipe end uncovered. Firmly press the tape against the threads using the tip of your fingernail. When applying liquid type seal material, apply the material to all the threads except one or two threads at the pipe end and take care not to apply too much of it.
Never apply the seal material to the female threads in the device side piping port.

4.3.2 Flushing

Before connecting pipes, flush the interiors of the tubes, solenoid valves, and connected devices to remove foreign matter.

4.3.3 M3·M5 joint

M3 and M5 joints are sealed using a gasket (Model No. for the gasket only: FGS). Do not retighten the joint screw when pressure is generated in the pneumatic circuit. Design and construct the piping system in such a way that the valves may be removed and reinstalled if a trouble should happen.

4.3.4 Blow circuit

Do not open the cylinder port circuit to the air because a drop in the air supply pressure may cause a malfunction. Select the external pilot type design instead of the internal pilot type design. The lowest allowable pressure with the internal pilot type design is 0.2 MPa.

4.3.5 Exhaust port

Minimize the restriction to the flow of the exhaust air because such restriction may cause a delay in the cylinder response. If such a delay happens, the speed needs to be adjusted between the cylinder and solenoid valve.

4.3.6 Pipe connections

(1) Tubes to be used

For use with solenoid valves with one-touch joints, select tubes of the type specified by us:

Soft nylon tubes (F-1500 Series)
Urethane tubes (U-9500 Series)

* • For Ø1.8 barbed (CF), use an UP-9102 (urethane).
• For Ø1.8 push in joints (C18), use an UP-9402 (urethane).

(2) For installation at a site that has spatters in the air, select incombustible tubes or metal pipes.

(3) For a piping used for both hydraulic and pneumatic controls, select a hydraulic hose.
When combining a spiral tube with a standard one-touch joint, fix the tube origin using a hose band. Otherwise the rotation of the tube will decrease the efficiency of the clamping.
For use in a high-temperature atmosphere, select fastener joints instead of one-touch joints.

(4) When selecting from tubes commercially available, carefully study the accuracy of the outside diameter as well as the wall thickness and the hardness. The hardness of an urethane tube should be 93° C or more (as measured by a rubber hardness meter).
With a tube that does not have a sufficient accuracy of the outside diameter or the specified hardness, a decrease in the chucking force may cause disconnection or difficulty in inserting.

Tube dimensions

Outside diameter mm	Inside diameter mm	
	Nylon	Urethane
ϕ1.8	-	ϕ1.2
ϕ3	-	ϕ2
ϕ4	ϕ2.5	ϕ2
ϕ6	ϕ4	ϕ4
ϕ8	ϕ5.7	ϕ5
ϕ10	ϕ7.2	ϕ6.5

Outside diameter allowance

Soft or hard nylon		±0.1mm
Urethane	ϕ1.8, ϕ3	±0.1mm
Urethane	ϕ4, ϕ6	+0.1mm -0.15mm
Urethane	ϕ8, ϕ10	+0.1mm -0.2mm

(5) Minimum bending radius of tubes
Observe the minimum bending radius of tubes. Neglecting the minimum bending radius may cause disconnection or leaks.

Tube bore	Minimum bending radius mm	
	Nylon	Urethane
ϕ1.8	-	4
ϕ3	-	8
ϕ4	10	10
ϕ6	20	20
ϕ8	30	30
ϕ10	40	40

(6) Cutting a tube
To cut a tube, use a tube cutter to cut the tube perpendicularly to the length of the tube. Inserting an obliquely cut end of a tube may cause air leakage.

(7) Tube connections

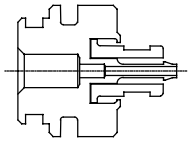
Do not bend a tube immediately at where it is connected to the joint but lead it out straight from the end of the joint for a length equal to or greater than the outside diameter of the tube. The tension applied sideways through the tube should not exceed 40N (about 5N for CF, C18, CL18 and CLL18).

(8) Blank plug to be used

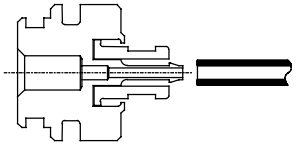
For use with a solenoid valve with a one-touch joint, select the blank plug specified by us:

Blank plug (PG-P2-B) : Ø1.8 push in joint
(N4E00-JOINT-PP3MW): Ø3 push in joint
(GWP□-B Series) : Ø4 to 8 push in joint

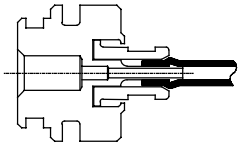
(9) Operating method of Ø1.8 barbed (CF).



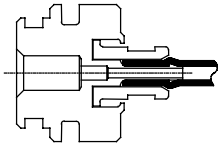
① Insert the collar until it stops.



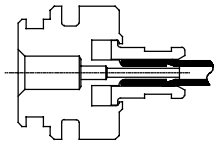
② Cut the tip of Air Fiber perpendicularly.



③ Insert Air Fiber properly while checking visually.



④ Insert Air Fiber until it stops.



⑤ Pull the collar to lock Air Fiber.

4.3.7 External pilot (K) type piping port

A different type supply port will be provided for the external pilot (K) type air supply. Since a 6mm diameter push-in joint is used for the pilot air supply, be sure to connect the piping correctly. Erroneous piping can cause a malfunction.

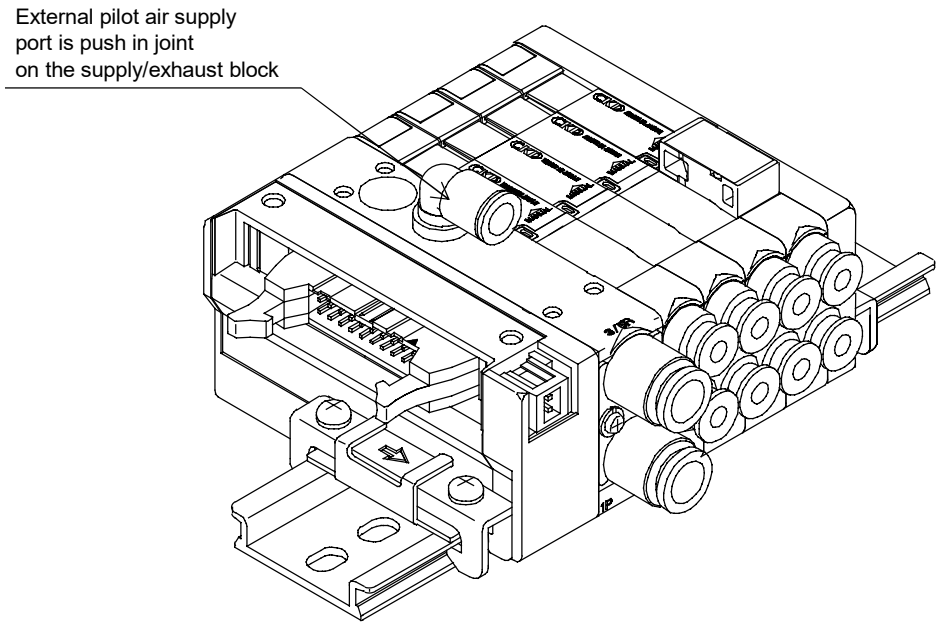
Port indication :

Application		Indication (ISO conformable)
Pilot air	Supply port	12/14

Be careful of the supply pressure when you use Two 3 -port valves built-in type.

As for Two 3 -port valves built-in type , valves work by the main（P）pressure.

- Be careful that main(P)pressure doesn't become more than pilot（PA）pressure.
- Be careful that main(P)pressure doesn't become less than 0.2MPa.



4.4 Wiring

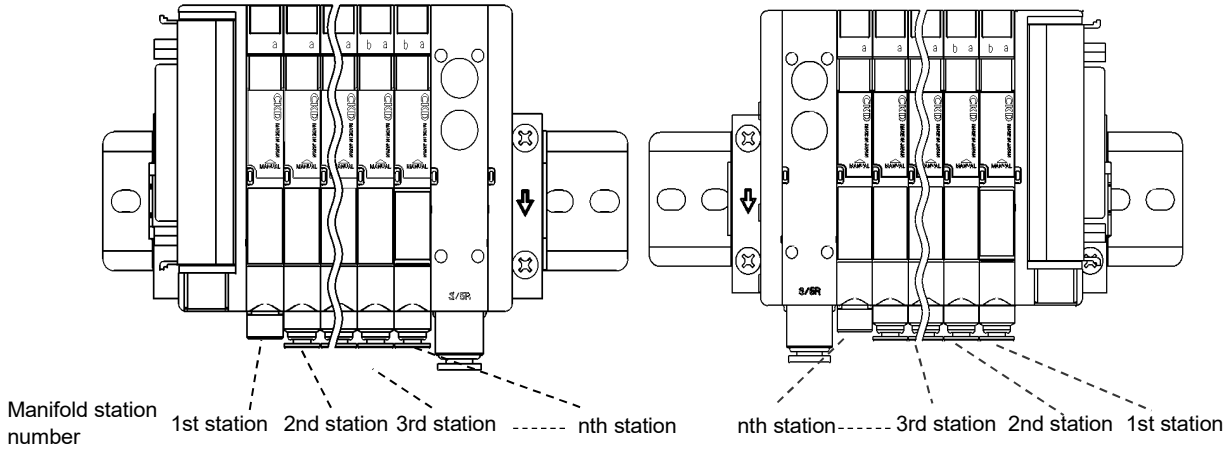
⚠ CAUTION : Before supplying the power, check the power supply voltage and the current type (AC or DC).

4.4.1 D sub-connector type : The connector for the T30/T30R

1) T30/T30R connector

The connector for the T30/T30R, which is usually called the D sub-connector, is widely used in FA and OA equipment. The 25P type, in particular, is the connector specified in the RS232C standard for use in personal computer communication.

The manifold station number is 1 ,2, 3, ..., starting at the wiring block. Note that the numbering direction of T30 is different from that of T30R.



2) Cautions regarding the connector type (T30/T30R)

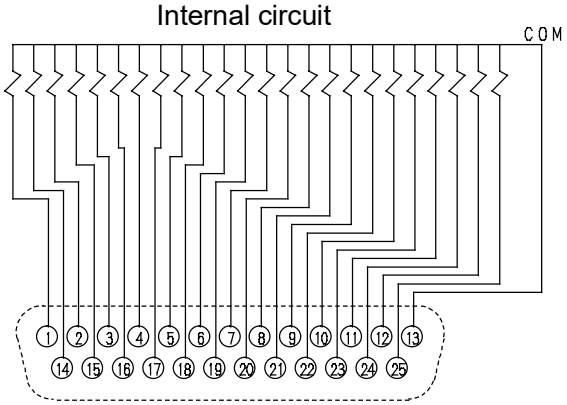
(1) It is necessary to match the signal arrangement of the PC output unit and that on the valve side.

(2) The operation power is DC24V or DC12V.

(3) Voltage drops will occur depending on cable lengths or at the time of simultaneous power supply. Make sure that a voltage drop for the solenoid is within 10% of the rated voltage.

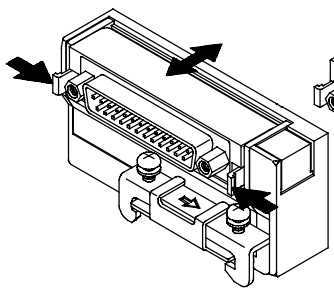
(4) In case of a valve block equipped with a built-in individual power supply (AUX) function or a built-in low heat generation and power saving circuit, the conducting polarity is positive common only.

Internal circuit

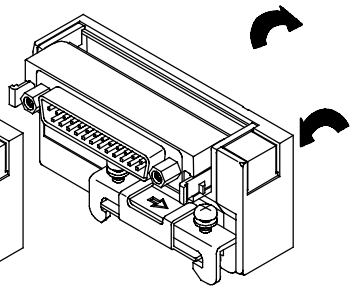


3) D-SUB Connector :
Changeover method for taking-out direction

Horizontal
Operating condition

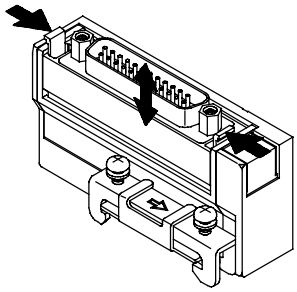


While holding the lever, pull out the connector horizontally.
When putting it back in place, push it in horizontally. (Fix it.)



Rotate the connector.
Be sure to fix it horizontally or vertically when using it.

Vertical
Operating condition

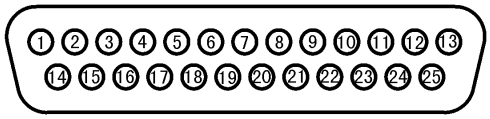


While holding the lever, pull out the connector vertically.
When putting it back in place, push it in vertically. (Fix it.)

4) Wiring method

※ The numbers in valve No. 1a, 2a, 2b,… indicate the station No.1, station No.2 and so on, while the alphabets (a) and (b) mean, respectively, the solenoid on the side (a) and the solenoid on the side (b). The maximum number of stations on the manifold differs among the models. Refer to the specifications of the model you selected.

Connector pin No.



- For single solenoid valve stations only

＜Standard wiring＞

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	5a	7a	9a	11a	13a	15a	17a	19a	21a	23a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	4a	6a	8a	10a	12a	14a	16a	18a	20a	22a	24a	

＜Double wiring＞

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	※1	※1	※1	※1	※1	※1	※1	※1	※1	※1	※1	※1	

※1 : Not used

- For double solenoid valve stations only

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	1b	2b	3b	4b	5b	6b	7b	8b	9b	10b	11b	12b	

- For mixed installation of single and double solenoid valve stations

＜Standard wiring＞

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	4a	5a	7a	8a	10a	11b	12b	14a	15b	17a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	3b	4b	6a	7b	9a	11a	12a	13a	15a	16a	17b	

＜Double wiring＞

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	COM
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	※1	※1	3b	4b	※1	※1	7b	※1	※1	※1	11b	12b	

※1 : Not used

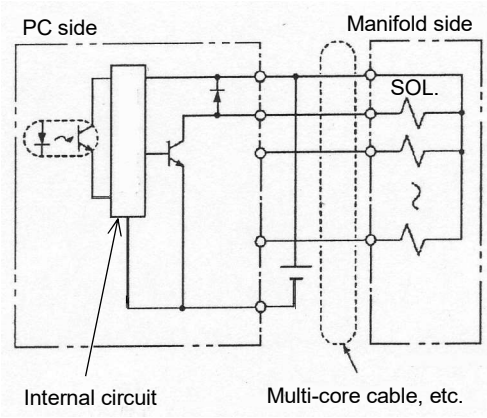
5) Connection to PC

The common wiring has been internally done on the manifold side.

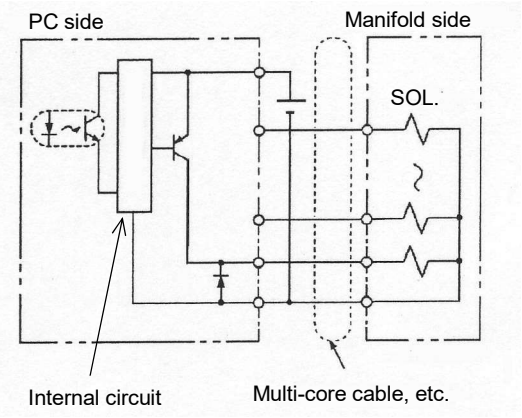
Since the electromagnetic valve has no polarity, it can be connected to either the NPN output or PNP output of the DC output unit of the PC.

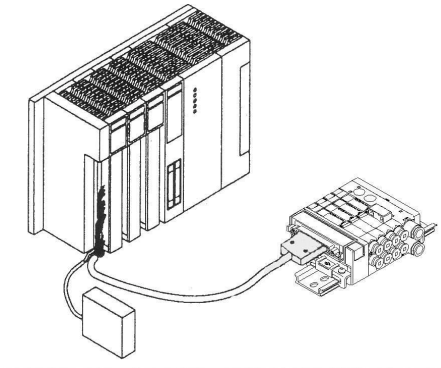
Wire each unit in the following manner.

DC output unit (NPN output)



DC output unit (PNP output)





6) Cable production

We recommend the following for the valve side in the production of the connection cable.

Name	Model	Manufacturer
D sub-connector socket solder type	HDBB-25S	Hirose Electric Co., Ltd.
D sub-connector socket solder type	JAZ25S	Nippon Atchaku Tanshi
D sub-connector socket crimp type	CDB-25S	Hirose Electric Co., Ltd.
D sub-connector socket crimp type	JAC-25S	Nippon Atchaku Tanshi
Plug case (for the solder type) (with M2.6 screw)	HDB-CTF	Hirose Electric Co., Ltd.
Plastic cover with M2.6 screw	JCB-25M	Nippon Atchaku Tanshi

Avoid the use of the press-connect type as much as possible as it has small electric capacity and the fine core wire of the able causes large voltage drop.

7) CKD cable specifications
(CKD cables of the following models can be used)

Model N4T − CABLE − D 0 □ (※1) − □ (※2)

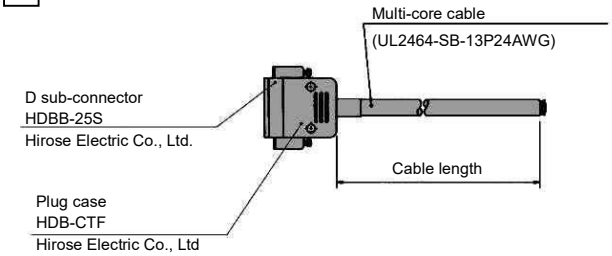
(※1) Connecting method on the user side

0	Cutting only
1	With round crimp terminal for M3.5 screws

(※2) Cable length L

1	1m
3	3m
5	5m

- N4T- CABLE- D00- L

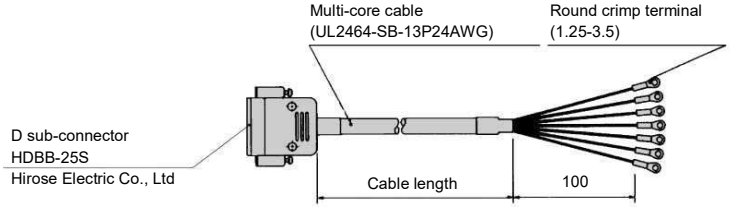


D sub-connector terminal numbers and core wires

D sub-connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Wire end identify-cation	Color of insulator	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green
	Kind of markings	1-dot										2-dots				
	Color of marking	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black

D sub-connector terminal No.		16	17	18	19	20	21	22	23	24	25
Wire end identify-cation	Color of insulator	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green
	Kind of markings	2-dots					3-dots				
	Color of marking	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black

- N4T- CABLE- D01- L



D sub-connector terminal numbers and core wires

D sub-connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Wire end identify-cation	Color of insulator	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green
	Kind of markings	1-dot										2-dots				
	Color of marking	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
Marked tube No.		1	2	3	4	5	6	7	8	9	10	Cut off	Cut off	13	14	15

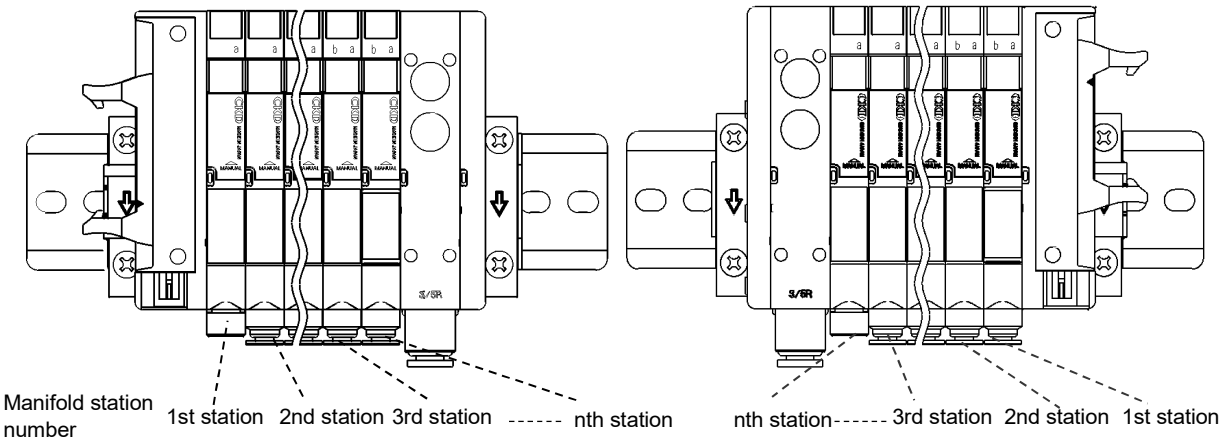
D sub-connector terminal No.		16	17	18	19	20	21	22	23	24	25
Wire end identify-cation	Color of insulator	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green
	Kind of markings	2-dots					3-dots				
	Color of marking	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
Marked tube No.		16	17	18	19	20	21	22	23	24	25

4.4.2 Flat cable type : The connector for the T50/T50R

1) Flat cable connector

The connector used in the T50/T50R complies with the MIL standard (MIL-C-83503). Its flat-cable press-connection design makes wiring work easy. Pin numbers may differ from one PC manufacturer to another, but their functions are the same. Use the connector and the reversed triangle mark in the drawing below as a reference point for arrangement. The triangle mark serves as a reference point for both the plug and the socket.

The manifold station number is 1 ,2, 3, ..., starting at the wiring block. Note that the numbering direction of T50 is different from that of T50R.



2) Cautions regarding the connector type (T50/T50R)

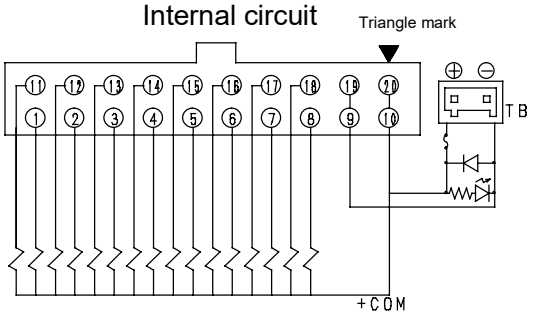
(1) It is necessary to match the signal arrangement of the PC output unit and that of the valve side. Since direct connection with the PC is limited, use cables specified by the PC manufacturer.

(2) The operation power is DC24V or DC12V.

(3) When driving the T50/T50R by an ordinary output unit, use the + terminals (20, 10) of the 20-P connector as the + side common and use an NPN transistor output open collector type as the drive circuit.

(4) Make sure to connect the manifold to the output unit. Never connect it to the input unit as a problem will involve not only this unit, but also other related equipment as well, seriously aggravating the situation.

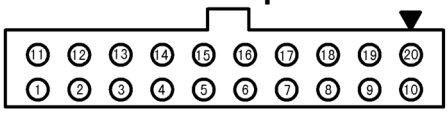
(5) Voltage drops will occur depending on cable lengths or at the time of simultaneous power supply. Make sure that a voltage drop for the solenoid is within 10% of the rated voltage.



3) Wiring method

※ The numbers in valve No. 1a, 2a, 2b,… indicate the station No.1, station No.2 and so on, while the alphabets (a) and (b) mean, respectively, the solenoid on the side (a) and the solenoid on the side (b). The maximum number of stations on the manifold differs among the models. Refer to the specifications of the model you selected.

Connector pin No.



- For single solenoid valve stations only

＜Standard wiring＞

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	9a	10a	11a	12a	13a	14a	15a	16a	※2	※3
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	※2	※3

＜Double wiring＞

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	※1	6a	※1	7a	※1	8a	※1	※2	※3
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	※1	2a	※1	3a	※1	4a	※1	※2	※3

※1 : Not used ※2 : -electric power supply ※3 : + electric power supply

- For double solenoid valve stations only

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	※2	※3
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	※2	※3

※1 : Not used ※2 : -electric power supply ※3 : + electric power supply

- For mixed installation of single and double solenoid valve stations

＜Standard wiring＞

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	7a	7b	8a	9a	10a	10b	11a	11b	※2	※3
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	※2	※3

＜Double wiring＞

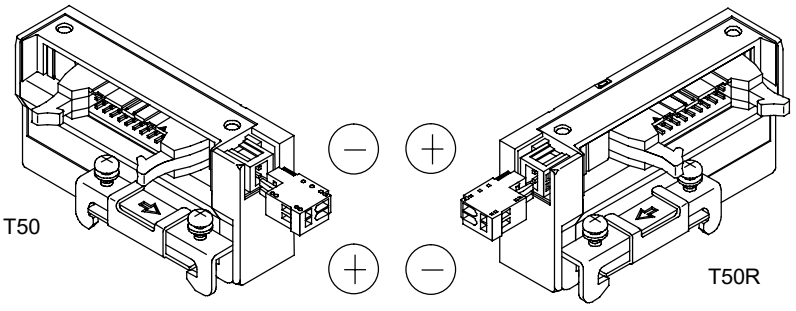
Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	※1	6a	※1	7a	7b	8a	※1	※2	※3
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	※1	2a	※1	3a	3b	4a	4b	※2	※3

※1 : Not used ※2 : -electric power supply ※3 : + electric power supply

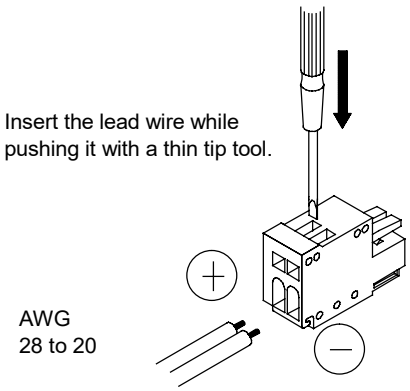
4) Power supply

The power supply connector is designed to accept power supplied from an external source when such outside power supply is needed. Supply the power to the wiring block or the input/output unit in the manner as shown in the following drawings. The power indicator lamp comes on after the connection has been made correctly. For wiring, check on the cover. Wiring errors cause malfunctions.

For the power-supply connector, the special connector is used.



The polarity of Power-Supply-Connector

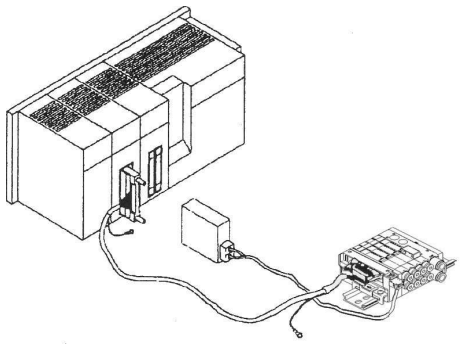


Wiring method

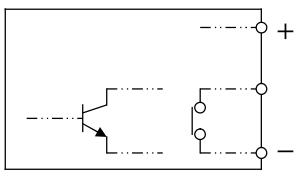
5) Connection to PC

(a) The units described below can be directly connected to the output unit by the designated cable. Make sure to have the combinations right, as combination errors may cause serious problems. Use cables designated by the manufacturer.

Manufacturer	PC model	Connecting cable model
OMRON Corporation	Model C200H-0D215 Model C500-0D415CN	Model G79-□C
	Model C500-0D213	Model G79-0□DC-□
Matsushita Electric Works, Ltd.	AFP33484	AY15133 to 7
	AFP53487	AY15223 to 7
Idec Izumi Corporation	PF3S-T32K	The same specifications as OMRON's



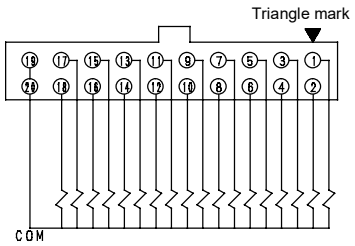
(b) When making a connection to units other than the PC mentioned above, make sure that the signal line and power line are wired correctly. Even if the connectors have the same shape, their pin arrangements may not be the same with different manufacturers or unit types. Check the pint arrangement before the wiring. For the output unit, use one with a contact between the minus side of the power source and the output point, or one with an NPN transistor open collector output.



4.4.3 Flat cable connector type : The connector for the T51/T51R

1) Cautions regarding the connector type (T51/T51R)

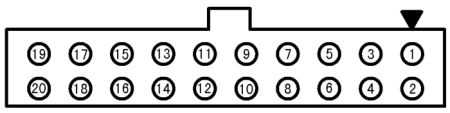
(1) The order of signals in the PC output unit should match the order of signals in the solenoid valve system.
(2) The operation power is DC24V or DC12V.
(3) With the T51/T51R type wiring, a general output unit should be used to drive the manifold.
(4) Make sure to connect the manifold to the output unit. Never connect it to the input unit as a problem will involve not only this unit, but also other related equipment as well, seriously aggravating the situation.
(5) Voltage drops will occur depending on cable lengths or at the time of simultaneous power supply. Make sure that a voltage drop for the solenoid is within 10% of the rated voltage.
(6) In case of a valve block equipped with a built-in individual power supply (AUX) function or a built-in low heat generation and power saving circuit, the conducting polarity is positive common only.



2) Wiring method

※ The numbers in valve No. 1a, 2a, 2b,… indicate the station No.1, station No.2 and so on, while the alphabets (a) and (b) mean, respectively, the solenoid on the side (a) and the solenoid on the side (b). The maximum number of stations on the manifold differs among the models. Refer to the specifications of the model you selected.

Connector pin No.



- For single solenoid valve stations only

＜Standard wiring＞

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	17a	15a	13a	11a	9a	7a	5a	3a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	18a	16a	14a	12a	10a	8a	6a	4a	2a

＜Double wiring＞

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	※1	※1	※1	※1	※1	※1	※1	※1	※1

※1 : Not used

- For double solenoid valve stations only

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	9b	8b	7b	6b	5b	4b	3b	2b	1b

- For mixed installation of single and double solenoid valve stations

＜Standard wiring＞

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	8a	7a	5a	4a	3a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	13a	11b	10b	9a	7b	6a	4b	3b	2a

＜Double wiring＞

Pin No.	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	※1	※1	7b	※1	※1	4b	3b	※1	※1

※1 : Not used

4.4.4 Flat cable connector type : The connector for the T52/T52R

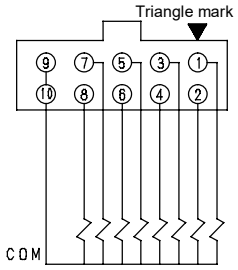
1) Cautions regarding the connector type (T52/T52R)

(1) The order of signals in the PC output unit should match the order of signals in the solenoid valve system.

(2) The operation power is DC24V or DC12V.

(3) With the T52/T52R type wiring, a general output unit should be used to drive the manifold.

(4) Make sure to connect the manifold to the output unit. Never connect it to the input unit as a problem will involve not only this unit, but also other related equipment as well, seriously aggravating the situation.



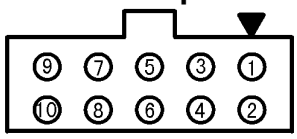
(5) Voltage drops will occur depending on cable lengths or at the time of simultaneous power supply. Make sure that a voltage drop for the solenoid is within 10% of the rated voltage.

(6) In case of a valve block equipped with a built-in individual power supply (AUX) function or a built-in low heat generation and power saving circuit, the conducting polarity is positive common only.

2) Wiring method

※ The numbers in valve No. 1a, 2a, 2b,… indicate the station No.1, station No.2 and so on, while the alphabets (a) and (b) mean, respectively, the solenoid on the side (a) and the solenoid on the side (b). The maximum number of stations on the manifold differs among the models. Refer to the specifications of the model you selected.

Connector pin No.



- For single solenoid valve stations only

＜Standard wiring＞

Pin No.	9	7	5	3	1
Valve No.	COM	7a	5a	3a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	8a	6a	4a	2a

＜Double wiring＞

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	※1	※1	※1	※1

※1 : Not used

- For double solenoid valve stations only

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	4b	3b	2b	1b

- For mixed installation of single and double solenoid valve stations

＜Standard wiring＞

Pin No.	9	7	5	3	1
Valve No.	COM	5b	4b	3a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	6a	5a	4a	2a

＜Double wiring＞

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	※1	※1	※1	※1

※1 : Not used

4.4.5 Flat cable connector type : The connector for the T53/T53R

1) Cautions regarding the connector type (T53/T53R)

(1) The order of signals in the PC output unit should match the order of signals in the solenoid valve system.

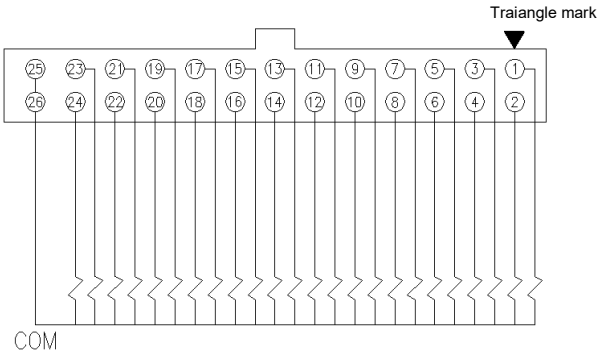
(2) The operation power is DC24V or DC12V.

(3) With the T53/T53R type wiring, a general output unit should be used to drive the manifold.

(4) Make sure to connect the manifold to the output unit. Never connect it to the input unit as a problem will involve not only this unit, but also other related equipment as well, seriously aggravating the situation.

(5) Voltage drops will occur depending on cable lengths or at the time of simultaneous power supply. Make sure that a voltage drop for the solenoid is within 10% of the rated voltage.

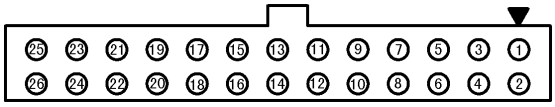
(6) In case of a valve block equipped with a built-in individual power supply (AUX) function or a built-in low heat generation and power saving circuit, the conducting polarity is positive common only.



2) Wiring method

※ The numbers in valve No. 1a, 2a, 2b,… indicate the station No.1, station No.2 and so on, while the alphabets (a) and (b) mean, respectively, the solenoid on the side (a) and the solenoid on the side (b). The maximum number of stations on the manifold differs among the models. Refer to the specifications of the model you selected.

Connector pin No.



- For single solenoid valve stations only

＜Standard wiring＞

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	23a	21a	19a	17a	15a	13a	11a	9a	7a	5a	3a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	24a	22a	20a	18a	16a	14a	12a	10a	8a	6a	4a	2a

＜Double wiring＞

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	※1	※1	※1	※1	※1	※1	※1	※1	※1	※1	※1	※1

※1 : Not used

- For double solenoid valve stations only

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	12b	11b	10b	9b	8b	7b	6b	5b	4b	3b	2b	1b

- For mixed installation of single and double solenoid valve stations

＜Standard wiring＞

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	16a	15a	14a	12a	10a	9a	8a	7a	5b	4b	3a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	16b	15b	14b	13a	11a	9b	8b	7b	6a	5a	4a	2a

＜Double wiring＞

Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	※1	※1	※1	9b	8b	7b	※1	5b	4b	※1	※1	※1

※1 : Not used

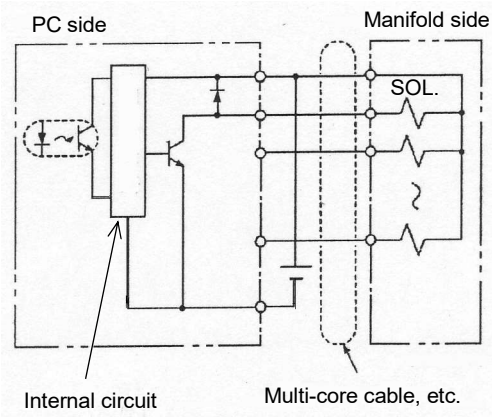
3) Connection to PC

The common wiring has been internally done on the manifold side.

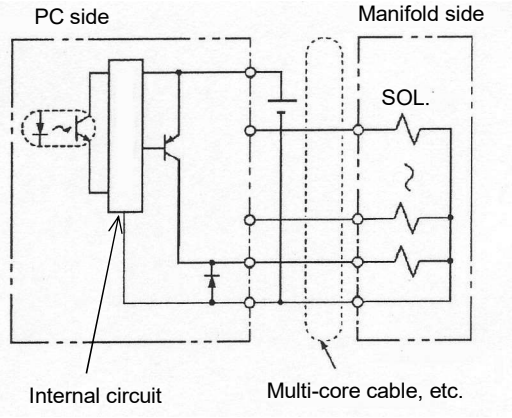
Since the electromagnetic valve has no polarity, it can be connected to either the NPN output or PNP output of the DC output unit of the PC.

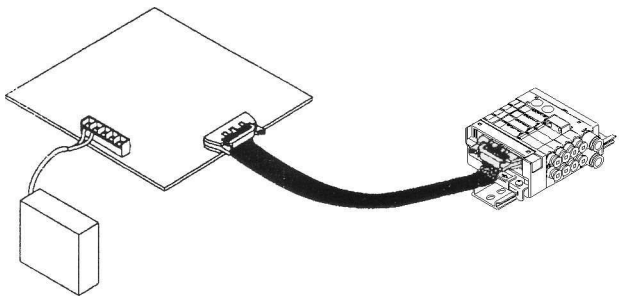
Wire each unit in the following manner.

DC output unit (NPN output)



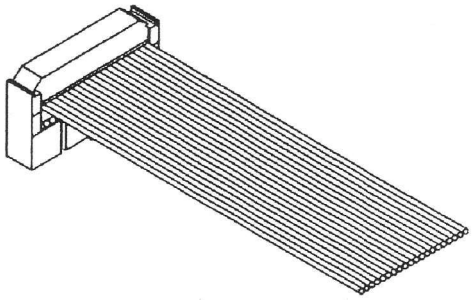
DC output unit (PNP output)





4) Cable production

To produce a connecting cable, we recommend the following equipment for the valve side. Make a correct selection and connection of the cable according to the catalog data sheet. The equipment shown here all complies with the MIL standard (MIL-C-83503) ; thus, there are many others that can be also used for connection, but their locking mechanism may not be suitable.
If so, secure the lock lever with a hand.



- Socket XG4M-2030 (OMRON Corporation)
  Strain relief XG4T-2004
- Loose wire press-connector XGM5-2032 (OMRON Corporation)
- Loose wire press-connector XGM5-2035 (OMRON Corporation)

5) Cable

The system uses flat cables or slender multi-conductor cables.
As these cables have fine core wires, it should be checked that they have enough mechanical strength and electric capacity.

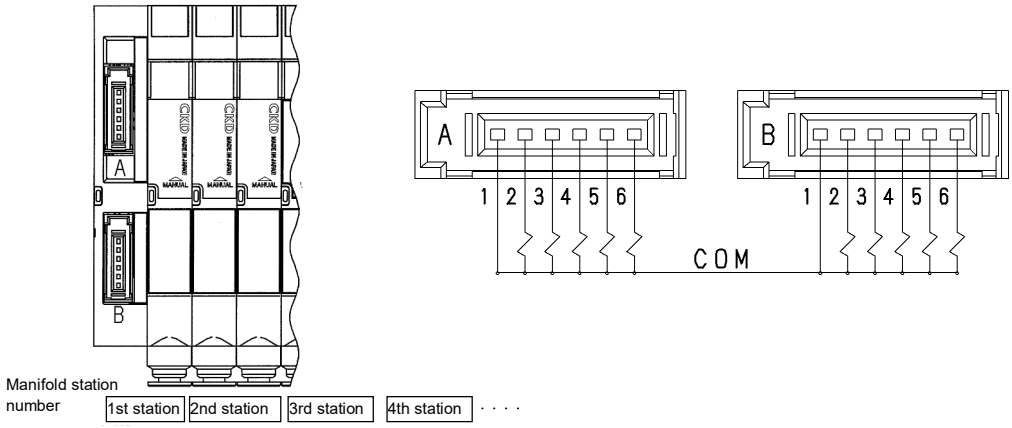
- Make sure to make a rounded corner (R) when bending the flat cable.
- The cable has large electric resistance (AWG28, approx. 0.22Ω/m).
  Pay special attention to voltage drop along the cable.
  If 16 solenoid valves are energized, voltage drop of approx. 0.1 V/m arises in the case of 24 V DC.

4.4.6 Intermediate wiring block type: Wiring method TM1A

1) Connector used for wiring method TM1A

The connector used for wiring method TM1A is the 6P RITS connector (1473562-6) made by Tyco Electronics AMP K.K. The connector is marked with pin numbers 1 to 6 and up to 10 input points can be assigned as shown below.

The manifold station number is 1, 2, 3, ... toward the right, starting at the intermediate wiring block.



2) Notes on connector type TM1A

(1) The signal allocation of the PC output unit must be the same as the signal allocation of the valve.

(2) The source power supply is only 24 or 12VDC.

(3) The TM1A type is driven by a general output unit.

(4) If this manifold is connected with an input unit, serious failures may be caused not only to these devices but also to peripheral devices. Never connect.
Be sure to connect this manifold to the output unit.

(5) A voltage drop is caused by simultaneous power-on procedures and some cable lengths. Check that the voltage drop caused to the solenoid is within 10% of the rated voltage.

(6) In case of a valve block equipped with an individual power supply (AUX) function or a built-in low heat generation and power saving circuit, the conducting polarity is positive common only.

3) Wiring method

* Valve numbers 1a, 1b, 2a, 2b, ... indicate station numbers and the letters a and b indicate the a-side and b-side solenoids respectively.
The maximum number of stations in the manifold varies according to the model.
Refer to the model-specific specifications.

- In case of single solenoid valve only

<Standard wiring>

	Connector A						Connector B					
Pin No.	1	2	3	4	5	6	1	2	3	4	5	6
Valve No.	COM	1a	2a	3a	4a	5a	COM	6a	7a	8a	9a	10a

<Double wiring>

	Connector A						Connector B					
Pin No.	1	2	3	4	5	6	1	2	3	4	5	6
Valve No.	COM	1a	(Not used)	2a	(Not used)	3a	COM	(Not used)	4a	(Not used)	5a	(Not used)

- In case of double solenoid valve only

	Connector A						Connector B					
Pin No.	1	2	3	4	5	6	1	2	3	4	5	6
Valve No.	COM	1a	1b	2a	2b	3a	COM	3b	4a	4b	5a	5b

- Mix (mixture of single and double solenoid valves)

<Standard wiring>

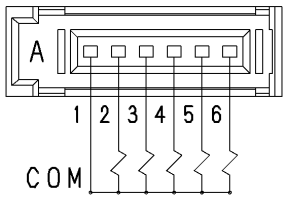
	Connector A						Connector B					
Pin No.	1	2	3	4	5	6	1	2	3	4	5	6
Valve No.	COM	1a	2a	2b	3a	4a	COM	4b	5a	6a	7a	7b

<Double wiring>

	Connector A						Connector B					
Pin No.	1	2	3	4	5	6	1	2	3	4	5	6
Valve No.	COM	1a	(Not used)	2a	2b	3a	COM	(Not used)	4a	(Not used)	5a	5b

4.4.7 Intermediate wiring block type: Wiring method TM1C

1) Notes on connector type (TM1C)
   (1) The signal allocation of the PC output unit must be the same as the signal allocation of the solenoid valve.
   (2) The source power supply is only 24 or 12VDC.
   (3) The TM1C type is driven by a general output unit.
   (4) If this manifold is connected with an input unit, serious failures may be caused not only to these devices but also to peripheral devices. Never connect.
   Be sure to connect this manifold to the output unit.
   (5) A voltage drop is caused by simultaneous power-on procedures and some cable lengths. Check that the voltage drop caused to the solenoid is within 10% of the rated voltage.
   (6) In case of a valve block equipped with an individual power supply (AUX) function or a built-in low heat generation and power saving circuit, the conducting polarity is positive common only.



2) Wiring method
   * Valve numbers 1a, 1b, 2a, 2b, ... indicate station numbers and the letters a and b indicate the a-side and b-side solenoids respectively.
   The maximum number of stations in the manifold varies according to the model.
   Refer to the model-specific specifications.

- In case of single solenoid valve only

<Standard wiring>

Pin No.	1	2	3	4	5	6
Valve No.	COM	1a	2a	3a	4a	5a

<Double wiring>

Pin No.	1	2	3	4	5	6
Valve No.	COM	1a	(Not used)	2a	(Not used)	3a

- In case of double solenoid valve only

Pin No.	1	2	3	4	5	6
Valve No.	COM	1a	1b	2a	2b	3a

- Mix (mixture of single and double solenoid valves)

<Standard wiring>

Pin No.	1	2	3	4	5	6
Valve No.	COM	1a	2a	3a	3b	4a

<Double wiring>

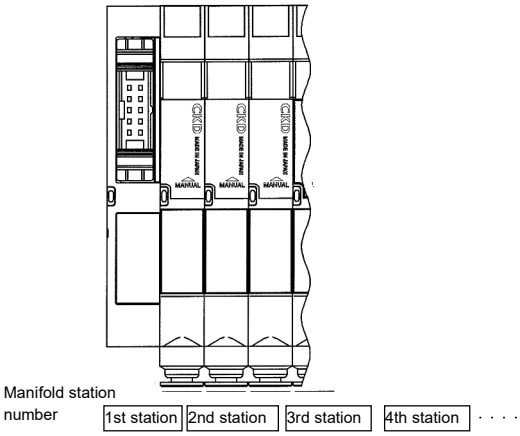
Pin No.	1	2	3	4	5	6
Valve No.	COM	1a	(Not used)	2a	(Not used)	3a

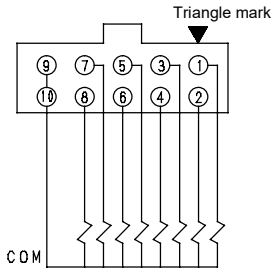
4.4.8 Intermediate wiring block type: Wiring method TM52

1) Flat cable connector

The connector used for wiring method TM52 complies with the MIL standard (MIL-C-83503). Pressure welding of the flat cable makes wiring work easier.

The pin number assignment varies among PC manufacturers while function assignment is the same. Arrange in reference to the triangle mark (▼) on the connector and in the table below. The ▼ mark serves as a reference for both the plug and socket. The manifold station number is 1, 2, 3, ...toward the right, starting at the intermediate wiring block.





2) Notes on connector type (TM52)

(1) The signal allocation of the PC output unit must be the same as the signal allocation of the valve.

(2) The source power supply is only 24 or 12VDC.

(3) The TM52 type is driven by a general output unit.

(4) If this manifold is connected to an input unit, serious failures may be caused not only to these devices but also to peripheral devices. Never connect.
Be sure to connect this manifold to the output unit.

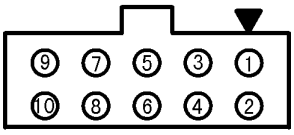
(5) A voltage drop is caused by simultaneous power-on procedures and some cable lengths. Check that the voltage drop caused to the solenoid is within 10% of the rated voltage.

(6) In case of a valve block equipped with an individual power supply (AUX) function or a built-in low heat generation and power saving circuit, the conducting polarity is positive common only.

3) Wiring method

* Valve numbers 1a, 1b, 2a, 2b, ... indicate station numbers and the letters a and b indicate the a-side and b-side solenoids respectively.
The maximum number of stations in the manifold varies according to the model.
Refer to the model-specific specifications.

Connector pin No.



- In case of single solenoid valve only

<Standard wiring>

Pin No.	9	7	5	3	1
Valve No.	COM	7a	5a	3a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	8a	6a	4a	2a

<Double wiring>

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	(Not used)	(Not used)	(Not used)	(Not used)

- In case of double solenoid valve only

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	4b	3b	2b	1b

- Mix (mixture of single and double solenoid valves)

<Standard wiring>

Pin No.	9	7	5	3	1
Valve No.	COM	5b	4b	3a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	6a	5a	4a	2a

<Double wiring>

Pin No.	9	7	5	3	1
Valve No.	COM	4a	3a	2a	1a
Pin No.	10	8	6	4	2
Valve No.	COM	(Not used)	(Not used)	(Not used)	(Not used)

4.4.9 Serial transmission type : The connector for the T6※

1) Notes on serial transmission type (T6※)

(1) The slave unit output numbers may vary with the manufacturers. The relationship between the connector pin numbers and solenoid valves is shown in the table below.

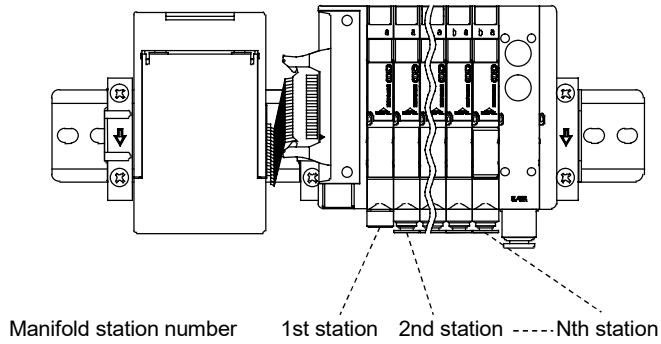
(2) Regardless of the wiring block position, the stations on the manifold are sequentially numbered from left to right with the piping ports in the front.

(3) Wiring the internal connectors sequentially will leave some output numbers unassigned if the number of stations is less than the number of external devices (devices other than the solenoid valves on the manifold) and use the output to drive them.

(4) Operating power is 24 VDC only.

(5) Slave units designed for various communication systems can be used. For information on the supported PLC models and the specification of communication systems that can be adopted by the master unit, refer to page 37 but consult us for details.

(6) Output numbers may differ from one PLC manufacturer to another, but their functions are the same. Use the connector and the reversed triangle mark (▼) below as a reference point for arrangement. The triangle mark (▼) serves as a reference point for both the plug and the socket.



2) Output No. and connection pins No.

- T6A0 T6C0 T6E0 T6J0

Output No.	0	1	2	3	4	5	6	7
Connector pin No.	1	2	3	4	5	6	7	8

- T6A1 T6C1 T6E1 T6J1

Output No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Connector pin No.	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18

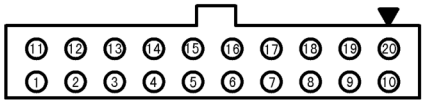
- T6G1

Output No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Connector pin No.	1	2	3	4	5	6	7	8	11	12	13	14	15	16	17	18

3) The pin array for the wiring method T6※ (example)

※ The numbers in valve No. 1a, 2a, 2b,… indicate the station No.1, station No.2 and so on, while the alphabets (a) and (b) mean, respectively, the solenoid on the side (a) and the solenoid on the side (b). The maximum number of stations on the manifold differs among the models. Refer to the specifications of the model you selected.

Connector pin No.



- For single solenoid valve stations only

＜Standard wiring＞

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	9a	10a	11a	12a	13a	14a	15a	16a	※1	+ COM
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	※1	+ COM

＜Double wiring＞

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	※1	6a	※1	7a	※1	8a	※1	※1	+ COM
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	※1	2a	※1	3a	※1	4a	※1	※1	+ COM

※1 : Not used

- For double solenoid valve stations only

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	※1	+ COM
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	※1	+ COM

※1 : Not used

- For mixed installation of single and double solenoid valve stations

＜Standard wiring＞

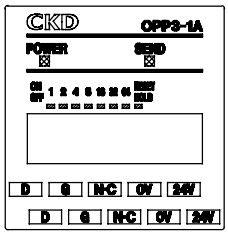
Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	7a	7b	8a	9a	10a	10b	11a	11b	※1	+ COM
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	※1	+ COM

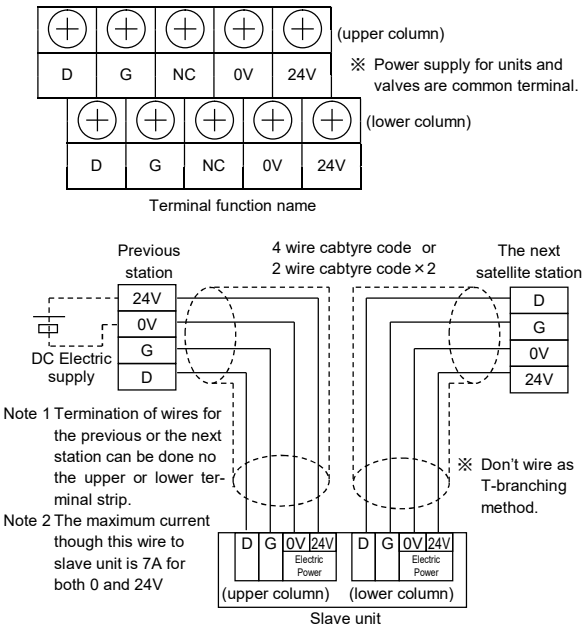
＜Double wiring＞

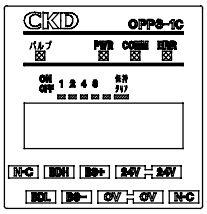
Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	※1	6a	※1	7a	7b	8a	※1	※1	+ COM
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	※1	2a	※1	3a	3b	4a	4b	※1	+ COM

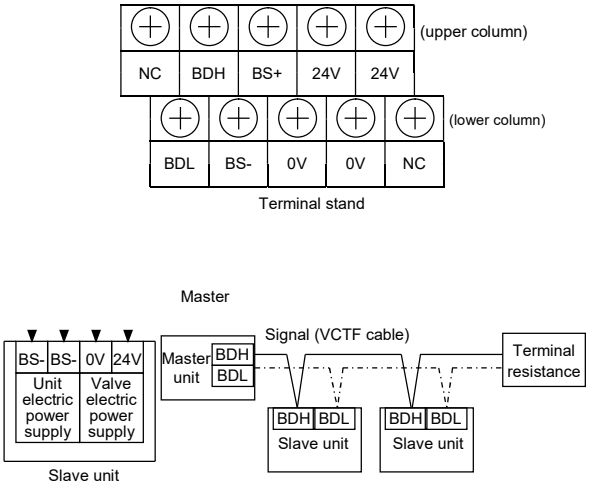
※1 : Not used

4) Remarks in wiring

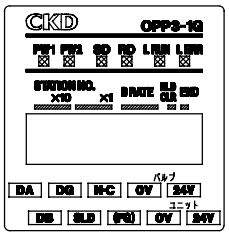
<table>
<tr><th></th><th>LED name</th><th>Wiring connection method</th></tr>
<tr><td>T6A0
T6A1</td><td>


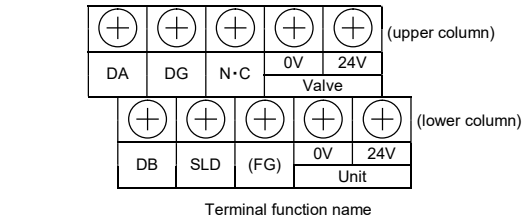
<table>
<tr><th>LED name</th><th>Display description</th></tr>
<tr><td>POWER</td><td>Turns on when the power is ON.</td></tr>
<tr><td>SEND</td><td>Flashing while transmission is normal “C” turns on off , when transmission is at fault.</td></tr>
</table>
</td><td>


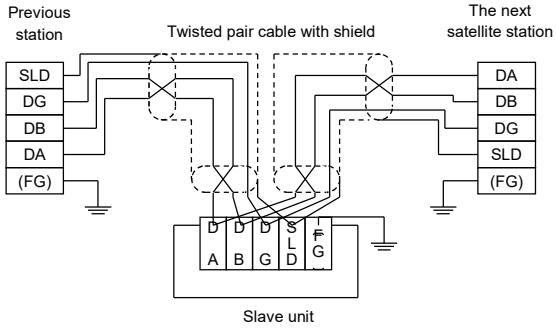
</td></tr>
<tr><td>T6C0
T6C1</td><td>


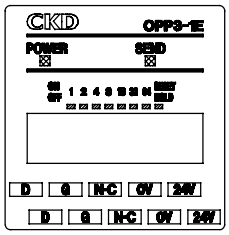
<table>
<tr><th>LED name</th><th>Display description</th></tr>
<tr><td>Valve (green)</td><td>Turns on when the valve power is switched ON.</td></tr>
<tr><td>PWR (green)</td><td>Turns on when the unit power is switched ON.</td></tr>
<tr><td>COMM (orange)</td><td>Turns on during normal communication. Goes off when communication is at fault and when the unit is standing by.</td></tr>
<tr><td>ERR (red)</td><td>Turns on when communication is at fault. Goes off during normal communication and when the unit is standing by.</td></tr>
</table>
</td><td>


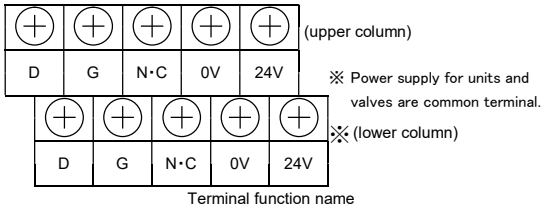
</td></tr>
</table>

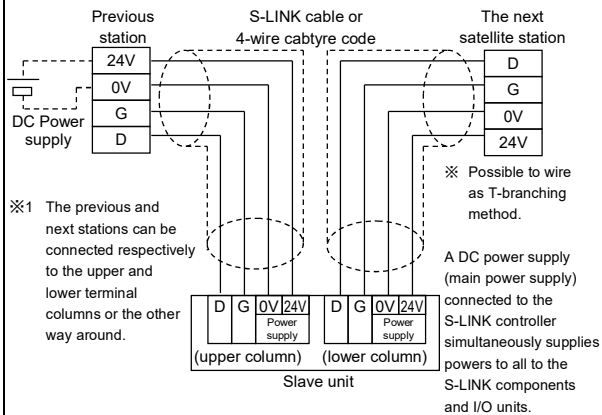
<table>
<tr><th></th><th>LED name</th><th>Wiring connection method</th></tr>
<tr><td>T6G1</td><td>


<table>
<tr><th>LED name</th><th>Display description</th></tr>
<tr><td>PW1</td><td>Turns on when the valve power is switched ON.</td></tr>
<tr><td>PW2</td><td>Turns on when the unit power is switched ON.</td></tr>
<tr><td>SD</td><td>Turns on when the unit is sending data.</td></tr>
<tr><td>RD</td><td>Turns on when the unit is receiving data.</td></tr>
<tr><td>L RUN</td><td>Turns on when data is received normally ;
goes off after a preset time.</td></tr>
<tr><td>L ERR</td><td>Turns on when a communication error occurs ; goes off after a preset time. Remains lit when the station number or transfer speed is wrongly set.
Flashes when the station number transfer speed is changed during a session.</td></tr>
</table>
</td><td>


Terminal function name


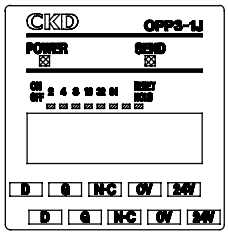
</td></tr>
<tr><td>T6E0
T6E1</td><td>


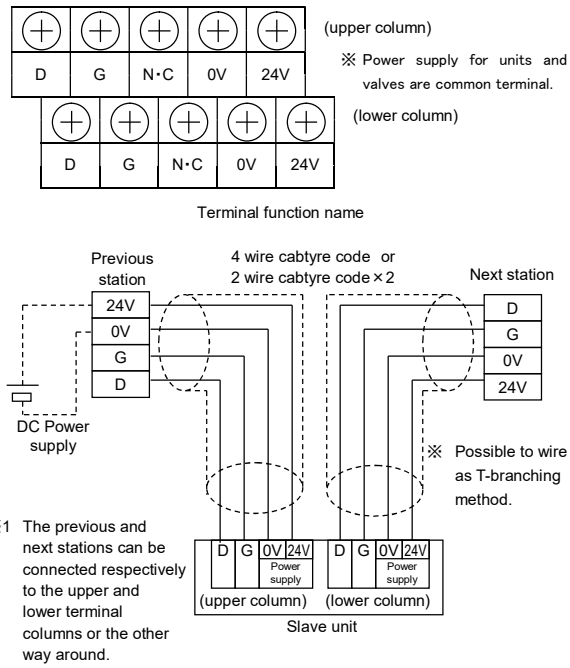
<table>
<tr><th>LED name</th><th>Display description</th></tr>
<tr><td>POWER</td><td>Turns on when the power is switched ON.</td></tr>
<tr><td>SEND</td><td>Flashes when communication is normal.
Remains lit or goes off when communication is at fault.</td></tr>
</table>
</td><td>


Terminal function name


※1 The previous and next stations can be connected respectively to the upper and lower terminal columns or the other way around.

A DC power supply (main power supply) connected to the S-LINK controller simultaneously supplies powers to all to the S-LINK components and I/O units.
</td></tr>
</table>

<table>
<tr><th></th><th>LED name</th><th>Wiring connection method</th></tr>
<tr>
<td>T6J0
T6J1</td>
<td>


<table>
<tr><th>LED name</th><th>Display description</th></tr>
<tr><td>POWER</td><td>Turns on when the power is switched ON.</td></tr>
<tr><td>SEND</td><td>Flashes when communication is normal.
Remains lit or goes off when communication is at fault.</td></tr>
</table>
</td>
<td>


</td>
</tr>
</table>

4.4.10 Serial transmission type: Wiring method T7*

1) Notes on serial transmission type (T7*)

(1) The output number of the slave station varies according to the manufacturer of the PLC. Refer to the table below.

(2) The output number of the slave station corresponds to the solenoid number of the manifold as shown in the table below.

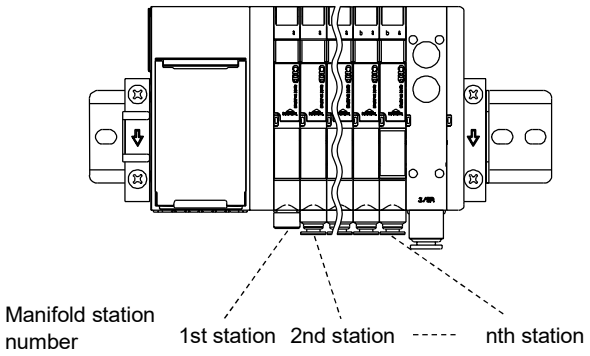
(3) The manifold stations are numbered without relations to the position of the wiring block from the leftmost one when viewed with the piping port facing you.

(4) Because the internal connectors are connected in order, some output numbers become blank if the number of solenoid points is smaller than the number of output points. The output of the blank may not be used to drive other than the solenoid valve manifold to be used.

(5) The source power supply is 24VDC only.

(6) The slave station of each communication system is used. For the model of the PLC to be used and the specifications of the model number communication system of the master station, contact us.

(7) After inserting, securely tighten each connector (for power supply/communication) to the product. As well, close the cover after setting up the address and others.
(Tightening torque: 0.25N-m (for power supply) and 0.3N-m (for communication))



2) PLC address correspondence table

(1) DeviceNet

This correspondence table is for the SYSMAC α Series PLC made by Omron Corporation and it is described as a typical example. In this example, the serial transmission slave station is set at node address 1 and fixed allocation (without a configurator) is assumed.

PLC allocation channel		51ch																52ch														
		00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Serial transmission slave station I/O No.		**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Solenoid output No.	T7D1	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16																
	T7D2	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32

※ In case of T7D2 (32-point outputs), both allocation channels 51 and 52 are occupied.

(2) CC-Link

This correspondence table indicates the case where the serial transmission slave station is station 1.

PLC buffer memory address		160H																161H															
		RY 00	RY 01	RY 02	RY 03	RY 04	RY 05	RY 06	RY 07	RY 08	RY 09	RY 0A	RY 0B	RY 0C	RY 0D	RY 0E	RY 0F	RY 10	RY 11	RY 12	RY 13	RY 14	RY 15	RY 16	RY 17	RY 18	RY 19	RY 1A	RY 1B	RY 1C	RY 1D	RY 1E	RY 1F
Serial transmission slave station I/O No.		**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Solenoid output No.	T7G1	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16																
	T7G2	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32

※ In case of T7G2 (32-point outputs), buffer memory addresses 160H and 161H are occupied.

(3) S-LINK V

PLC address		Y 00	Y 01	Y 02	Y 03	Y 04	Y 05	Y 06	Y 07	Y 08	Y 09	Y 0A	Y 0B	Y 0C	Y 0D	Y 0E	Y 0F	Y 10	Y 11	Y 12	Y 13	Y 14	Y 15	Y 16	Y 17	Y 18	Y 19	Y 1A	Y 1B	Y 1C	Y 1D	Y 1E	Y 1F
Serial transmission slave station I/O No.		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Solenoid output No	T7N1	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16																
	T7N2	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32

3) Valve number arrangement corresponding to T7* solenoid output number (example)

* Valve numbers 1a, 1b, 2a, 2b, ... indicate station numbers and the letters a and b indicate the a-side and b-side solenoids respectively.

The manifold stations are numbered from the leftmost one, when viewed with the piping port facing you.

The maximum number of stations in the manifold varies according to the model. Refer to the model-specific specifications.

<Standard wiring>

● In case of single solenoid valve

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a	13a	14a	15a	16a	17a	18a	19a	20a	21a	22a	23a	24a	25a	26a	27a	28a	29a	30a	31a	32a

● In case of double solenoid valve

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

● In case of mix (mixture of single and double solenoid valves)

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	7a	7b	8a	9a	10a	10b	11a	11b	12a	13a	14a	14b	15a	15b	16a									

<Double wiring>

● In case of single solenoid valve

Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	*1	2a	*1	3a	*1	4a	*1	5a	*1	6a	*1	7a	*1	8a	*1	9a	*1	10a	*1	11a	*1	12a	*1	13a	*1	14a	*1	15a	*1	16a	*1

● In case of double solenoid valve

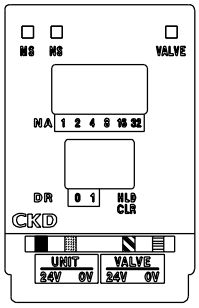
Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

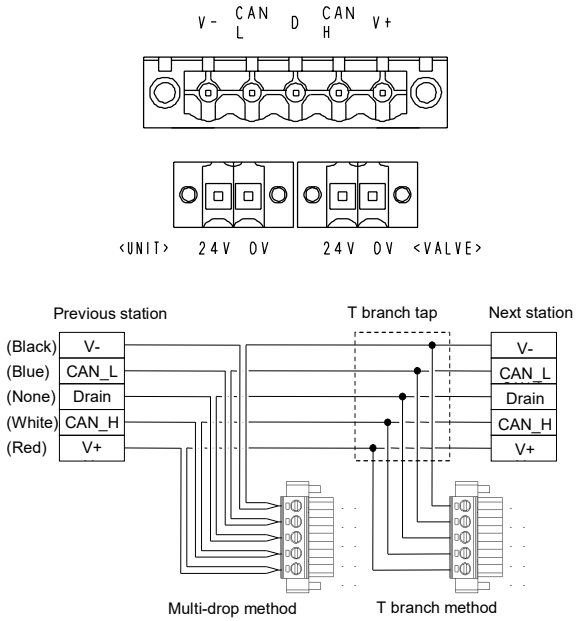
● In case of mix (mixture of single and double solenoid valves)

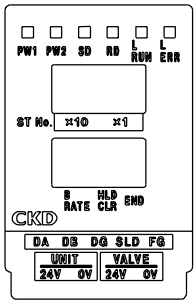
Solenoid output No.	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No.	1a	*1	2a	*1	3a	3b	4a	4b	5a	*1	6a	*1	7a	7b	8a	*1	9a	*1	10a	*1	11a	11b	12a	12b	13a	*1	14a	*1	15a	15b	16a	*1

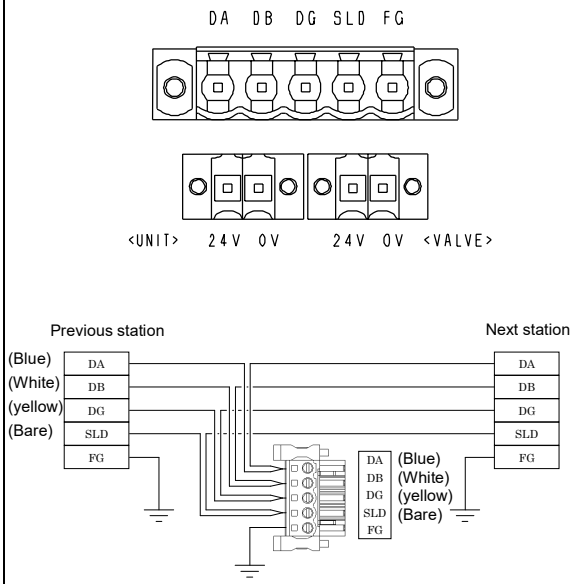
*1: Not used

4) Remarks on wiring

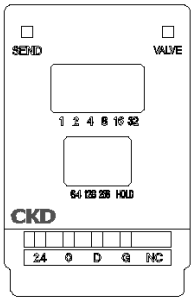
<table>
<tr><th></th><th>LED indication</th><th>Wiring method</th></tr>
<tr><td>T7D1
T7D2</td><td>


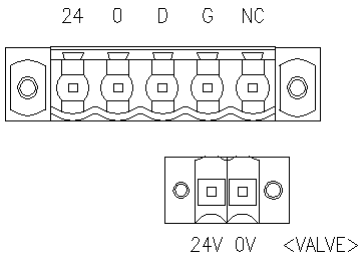
<table>
<tr><th>Name of LED</th><th>Indication</th></tr>
<tr><td>MS</td><td>The green and red LEDs indicate the status of the slave.
A fault is indicated with the combination with the NS LED.</td></tr>
<tr><td>NS</td><td>The green and red LEDs indicate the network status.
A fault is indicated with the combination with the MS LED.</td></tr>
<tr><td>VALVE</td><td>Lit upon power-on of the unit.</td></tr>
</table>
</td><td>


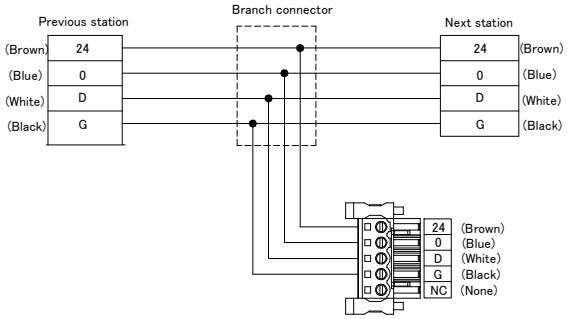
</td></tr>
<tr><td>T7G1
T7G2</td><td>


<table>
<tr><th>Name of LED</th><th>Indication</th></tr>
<tr><td>PW1</td><td>Lit upon power-on of the unit.</td></tr>
<tr><td>PW2</td><td>Lit upon power-on of the valve</td></tr>
<tr><td>SD</td><td>Lit upon data transmission.</td></tr>
<tr><td>RD</td><td>Lit upon data reception.</td></tr>
<tr><td>L RUN</td><td>Lit during correct data reception.
Unlit upon timeout.</td></tr>
<tr><td>L ERR</td><td>Lit upon a transmission error.
Unlit upon timeout.
Lit upon an error in station number entry or transmission speed entry.
Blinks upon an intermediate change in the station number or transmission speed.</td></tr>
</table>
</td><td>


</td></tr>
</table>

<table>
<tr><th></th><th>LED indication</th><th></th></tr>
<tr><td>T7N1
T7N2</td><td>


<table>
<tr><th>Name of LED</th><th>Indication</th></tr>
<tr><td>SEND</td><td>This indicator will blink during transmission(when the transmission signal is being output)</td></tr>
<tr><td>VALVE</td><td>Lit upon power-on of the unit.</td></tr>
</table>
</td><td>


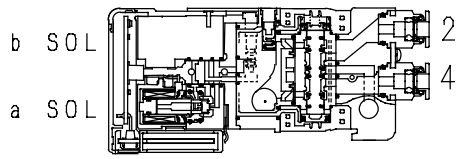
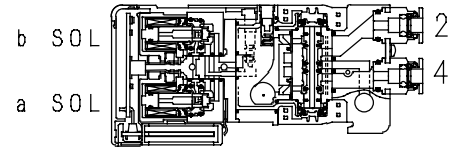
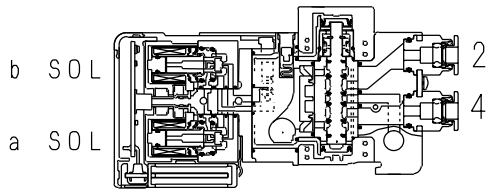
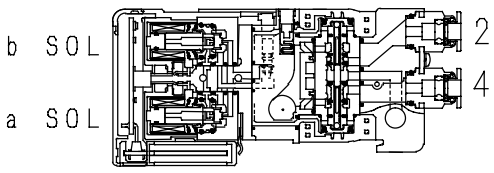


</td></tr>
</table>

5. OPERATING RECOMMENDATION

5.1 Operation

1) Valve Operation

	Operation			Operating
	(a) sol ON	Power off	(b) sol ON	
				 (N4E010)
N3E010	1→4	4→3		
N3E0010				
N3E0110	2→3	1→2		
N3E00110				
N4E010	1→4 2→3	4→3 1→2	–	
N4E0010				
2-Position Double				 (N4E020)
N3E020	1→4	–	4→3	
N3E0020				
N3E0210	2→3	–	1→2	
N3E00210				
N4E020	1→4 2→3	–	4→3 1→2	
N4E0020				
3-Position				 (N4E030)
N4E030	1→4 2→3	1, 2 3, 4 close	4→3 1→2	
N4E040	1→4 2→3	4→3 2→3	4→3 1→2	
N4E050	1→4 2→3	1→4 1→2	4→3 1→2	
Tow 3-port valves built-in type				 (N3E067S0)
N3E0660(S)	1→4	4→3	2→3	1→2
N3E00660(S)				
N3E0670(S)	1→4	4→3	1→2	2→3
N3E00670(S)				
N3E0760(S)	4→3	1→4	2→3	1→2
N3E00760(S)				
N3E0770(S)	4→3	1→4	1→2	2→3
N3E00770(S)				

2) Self-Reset of Valve

In the valve block changing position division, a self-reset type is available.

This self-reset type has 2 types available: “Differential pressure return” and “Differential pressure spring return”.

Under the normal pressure, the main valve returns to zero (self-reset) in OFF-state for both types, but where the supply pressure has reached “0” in ON-state:

“Differential pressure return” - The present position is maintained.

“Differential pressure spring return” - The main valve is returned to the home position by means of spring force (action).

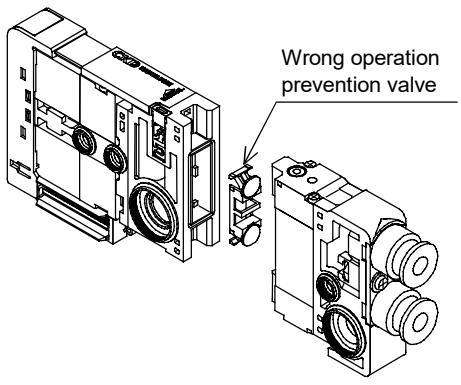
Take special care so that no operational mistake arises according to the interlock specifications for the equipment to be used.

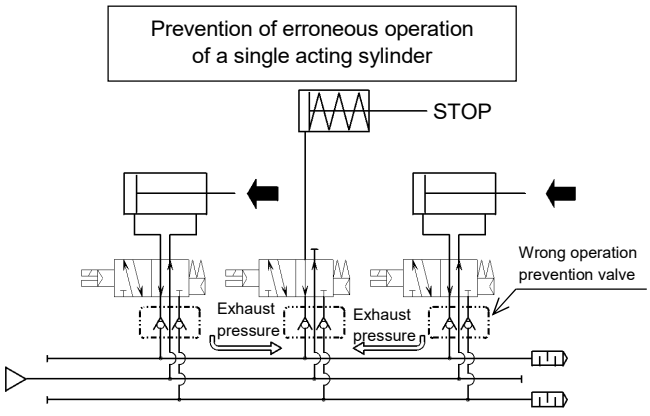
Main Valve Holding / Reset Condition Table

Valve Type			Main Pressure down in On-state	→Main Pressure Reset	Power Cut-off in ON-state
N3E0 N3E00	1/11	3-port valve single NC/NO self-reset type (Differential pressure spring return)	OFF (Origin) move	ON move	OFF (Origin) move
	2/21	3-port valve double NC/NO self-holding type	ON position holding		ON position holding
	66・67・76・77	Two 3-port valves built-in type NC/NO self-reset type (Differential pressure return)	ON position holding		OFF (Origin) move
	66S・67S・76S・77S	Two 3-port valves built-in type double NC/NO self-reset type (Differential pressure spring return)	OFF (Origin) move	ON move	OFF (Origin) move
N4E0 N4E00	1	4-port valve 2-position single self-reset type (Differential pressure spring return)	OFF (Origin) move	ON move	OFF (Origin) move
	2	4-port valve 2-position double self-holding type	ON position holding		ON position holding
	3・4・5 (N4E0 only)	4-port valve 3-position type	OFF (Origin) move	ON move	OFF (Origin) move

3) Prevention of malfunctioning

4E series manifold is equipped with the exhaust malfunction preventive valve. This valve prevents connected cylinder malfunctioning caused by exhaust pressure intrusion.





4) Individual wiring type (N3E0/N4E0)

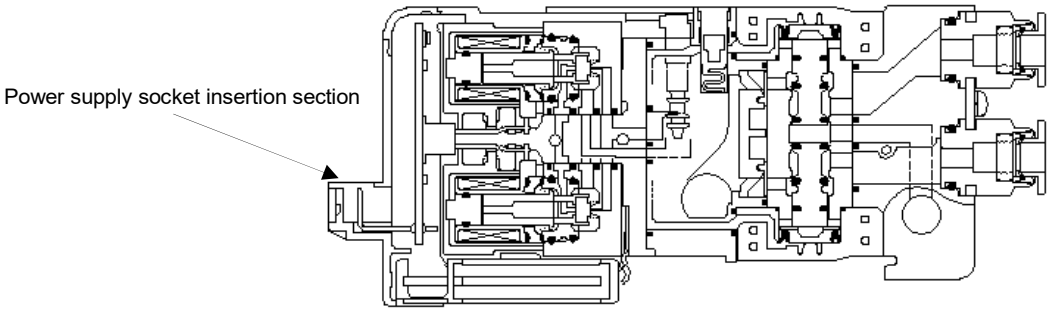
Inputs from a separate system independent of the reduced integral wiring system can be supplied individually.

CAUTION:

* **Caution on use of individual wiring**

- Models with only a built-in lamp and surge suppressor operate on both polarities: positive and negative.
- **The type with a built-in low heat generation and power saving circuit is for positive common only.** Be careful for the connection polarity.
- **The internal circuit of the individual wiring valve block is completely isolated from the reduced wiring electric circuit inside the manifold.** Therefore insertion of an individual wiring valve block between individual wiring valve blocks does not cause a change in the pin layout of the wiring block related to the reduced wiring valve block.

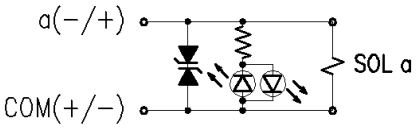
(1) Block diagram of valve block individual wiring type



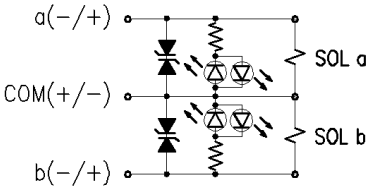
(2) Polarity of individual wiring

The type with a built-in low heat generation and power saving circuit is for positive common only. Be careful of the connection polarity.

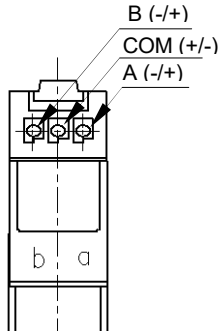
1. Standard (Type with built-in lamp･surge and protect circuit)



Single

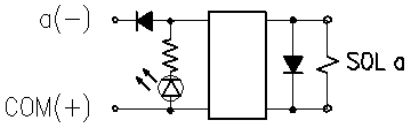


Double

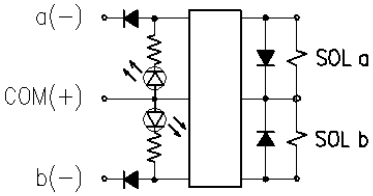


Top view of valve block

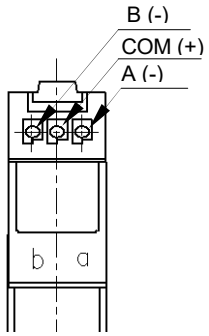
2. The type with a built-in low heat generation and power saving circuit.



Single, with built-in power saving circuit



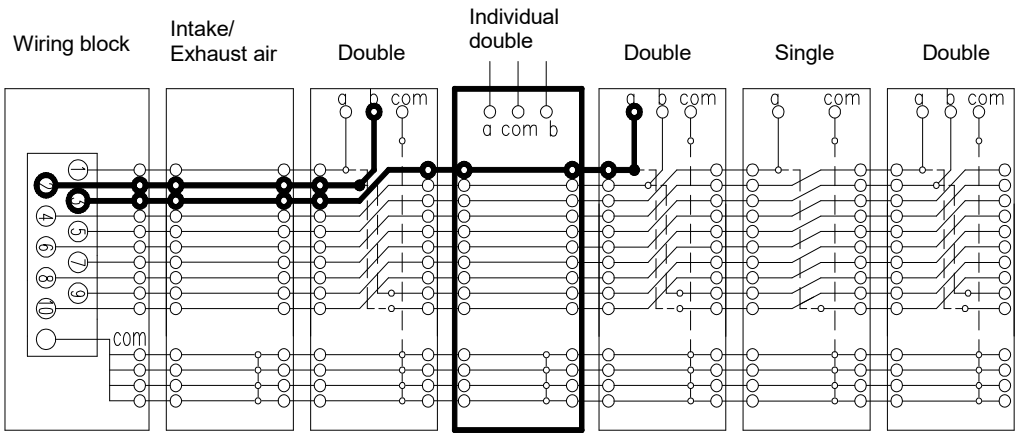
Double, with built-in power saving circuit



Top view of valve block

(3) Reduced wiring inside manifold for mixture with reduced wiring

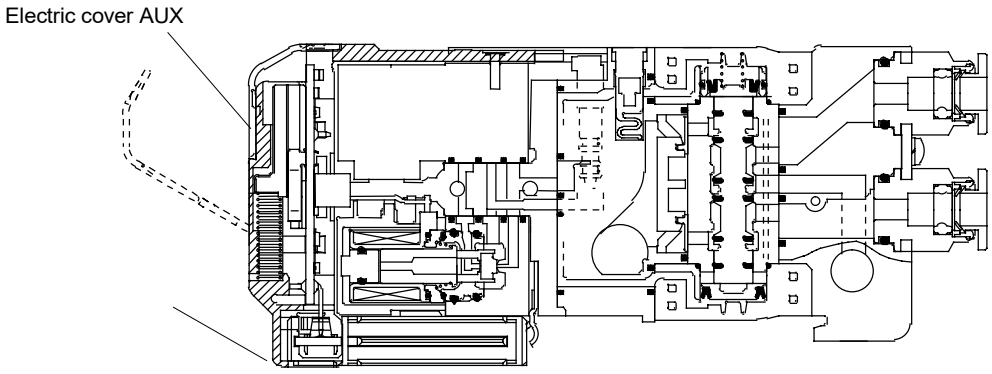
The internal circuit of the individual wiring valve block is completely isolated from the reduced wiring electric circuit inside the manifold. Therefore insertion of an individual wiring valve block between individual wiring valve blocks does not cause a change in the pin layout of the wiring block related to the reduced wiring valve block.



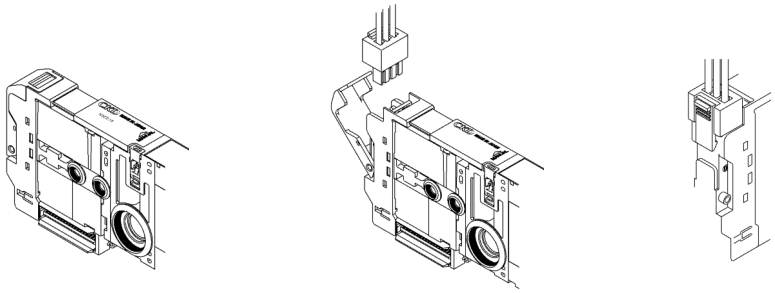
The pin arrangement on the wiring block side is in order from station 1 without a blank station, excluding individual wiring.

5) Type with built-in separate power supply (AUX) function (N3E0/N4E0)
The type with a built-in individual power supply (AUX) function can control an arbitrary valve with a separate power supply in the manifold where reduced wiring connection is already made, so that it is effective for adjustment of equipment.

(1) Block diagram of valve block type with built-in AUX function

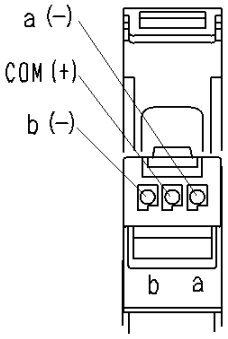


(2) Individual power supply method
Open the electric cover and connect the power supply socket (N4E0 – SOCKET– S/D).

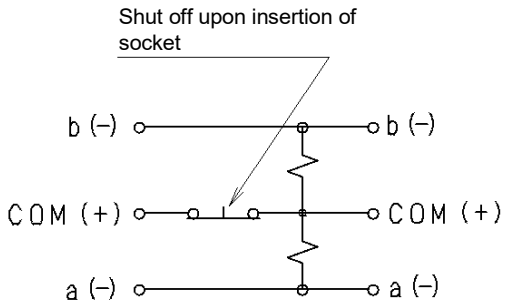


After the power supply socket is connected, the internal wiring of the valve is temporarily disconnected from reduced wiring inside the manifold, and external power can be supplied.

(3) Structure of AUX terminal and internal circuit diagram



Top view of valve block
Socket insertion drawing



Side of internal wiring inside manifold
AUX terminal side

Polarity of AUX terminal and outline of internal circuit

CAUTION:

*** Caution on use of AUX**

- The polarity is positive common on both the reduced wiring and individual power supply sides. Be careful of the polarity. Correct operation is not assured with wrong polarity.
- Use a power supply independent of that of the reduced wiring side, for the individual power supply side. If the same power supply is used, wiring on the reduced wiring side is not isolated, possibly causing malfunction.

5.2 Manual Override

WARNING:

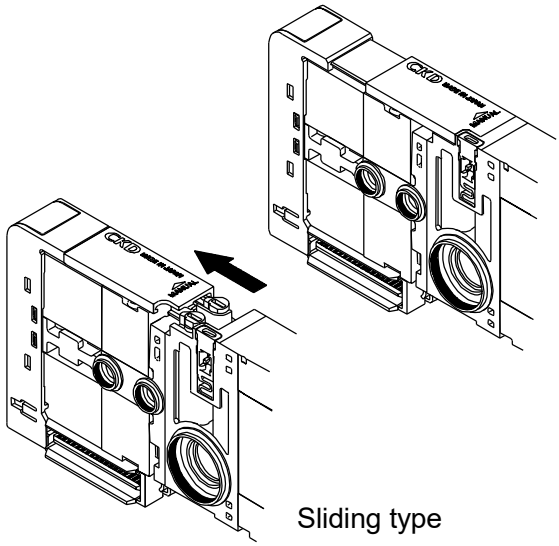
a) After using the manual override, be sure to reset the manual override to the original (OFF) position before resuming the operation of the device.
After a operation, be sure to release the lock to turn the manual override OFF.
With the 4E-Series solenoid valve system, the lock is released (the manual override turned OFF) if the manual override protection cover is closed.

b) Before using the manual override, make sure that nobody is present near the cylinder to be activated.

(1) The 4E Series solenoid valve systems use pilot type solenoid valves. Unless the air is supplied to the P port, the main valve position will not change even when you operate the manual override.
(2) The manual override protection cover is provided as a part of the standard specifications. When the product is delivered, the protection cover is closed and the manual override is not visible. To use the manual override, open the protection cover first.
Note that the protection cover cannot be closed if the manual override is locked (ON).
(3) In manual override of a type which has a lock function and a non-lock function,it locks when rotating with the knob pushed. Please be sure to turn after pushing a knob.
Manual override might be damaged and air leak when turning without pushing the knob.

5.2.1 Opening and closing the manual override protection cover

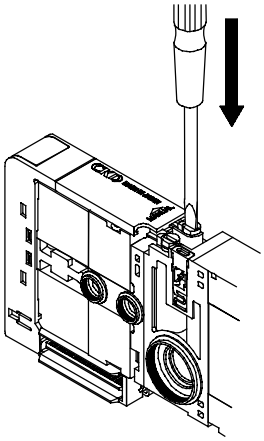
When opening and closing the manual override protection cover, do not use an excessive force. Excessive force may cause a failure. (The force applied should be less than 5N.)



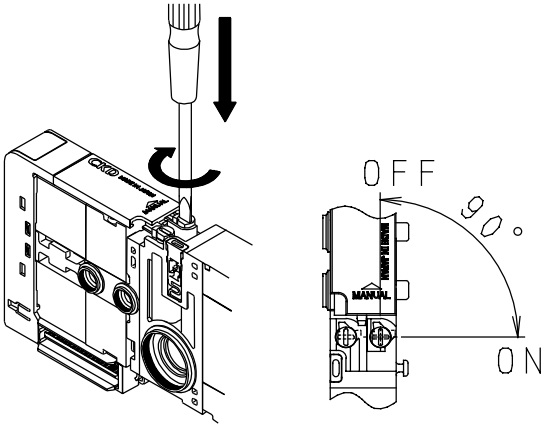
Sliding type

5.2.2 Operating the manual override

1) Non-lock type operation (push and release)
Press the manual override knob in the direction of the arrow until it hits the stopper. The manual override is turned OFF as you let go of the knob.



2) Lock type operation (push and lock)
Press and then turn the manual override knob in the direction of the arrow. The manual override remains turned ON even when you let go of the knob.



5.3 Air Quality

WARNING:

a) Do not supply anything other than compressed air.

b) Supply clean compressed air without any mixture of corrosive gas.

CAUTION:

a) Compressed air usually contains a large amount of drain, oxidized oil, tar, foreign matter, and rust from the piping. Filter out those elements in the supplied air because they may cause a malfunction and decrease service life. In addition, clean the exhaust before it is released to the air to minimize pollution.

b) Once you have lubricated a pre-lubricated valve, the valve is no longer capable of running without being lubricated from the outside. Do not leave the valve without lubrication but keep it lubricated.

c) Do not use spindle oil or machine oil. They may induce expansion of the rubber parts, which may cause a malfunction.

5.3.1 Lubrication

The 4E Series solenoid valve systems use pre-lubricated valves that usually do not require lubrication from the outside. If you have to lubricate a valve, use Type 1 turbine oil (ISO-VG32) without additives.
Excessive lubrication and extremely low pressure may cause a longer response time. The response time in the catalogue assumes no lubrication from the outside and the air supply pressure of 0.5 MPa.

5.3.2 Ultra-dry compressed air

The use of ultra-dry compressed air will cause splashing of the lubrication oil and result in a shorter service life.

5.3.3 Drain

(1) The drain is produced by a drop of temperature in pneumatic piping and devices.
(2) The drain may enter and instantaneously block a passage inside a pneumatic device and cause a malfunction.
(3) The drain accelerates the production of rust, which may cause the failure of pneumatic devices.
(4) The drain may wash away the lubrication oil, causing a malfunction from the lack of lubrication.

5.3.4 Foreign matter in the compressed air

1) Supply clean compressed air that does not include oxidized oil, tar, carbon, or other foreign matter from the air compressor.
   (1) If oxidized oil, tar, carbon, or the like enters a pneumatic device and sticks to its components, an increase in the resistance at sliding portions may cause a malfunction.
   (2) If oxidized oil, tar, carbon, or the like is mixed with the supplied lubrication oil, wear of the sliding components of the pneumatic device may be accelerated.

2) Supply clean compressed air that does not include solid foreign matter.
   (1) Solid foreign matter in the compressed air may cause wear of the sliding components of the pneumatic device or stick to such components and cause hydraulic lock.

5.3.5 Cleaning the supplied air

Compressed air usually contains a large amount of drain (water, oxidized oil, tar, and foreign matter). Remove these elements and clean the supplied air because they may cause a failure of the air compressor. For example, remove the humidity using an after-cooler dryer and remove the tar using a tar filter.

5.4 Electric circuits

5.4.1 About Electric circuits

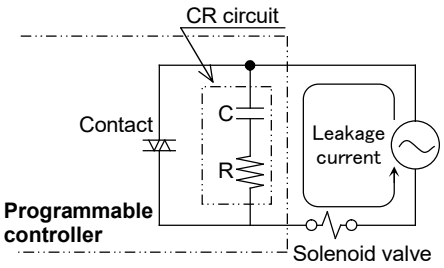
CAUTION:

a) Check for the presence of any current leak from the external control device because it may cause an erroneous valve operation.

- When a programmable controller or a similar control device is used, a current leak may prevent the normal returning of the valve when the solenoid is de-energized.

b) Restriction on current leak

- When controlling solenoid valves using a programmable controller or a similar control device, make sure that the current leak in the programmable controller output is equal to or less than the level shown in the table below. A current leak larger than the allowable level may cause an erroneous valve operation.



12VDC	1.5mA or lower
24VDC	1.8mA or lower

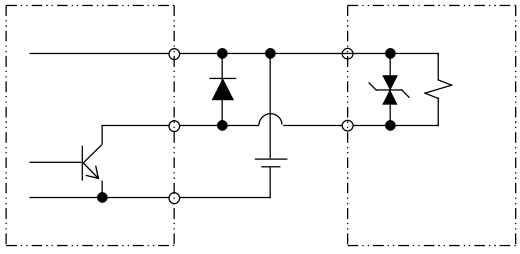
CAUTION:

a) The surge suppressor limits the surge voltage generating from the solenoid valve, which reaches several hundred volts, to a low voltage level bearable for output contacts. This function may be insufficient for some output circuits and the voltage may cause breakage or malfunction. Check the surge voltage limitation level of the solenoid valve in your circuit, the dielectric voltage and circuit configuration of the output devices and the delay for recovery to check for serviceability. If necessary, install another measures against surges. The 4E Series solenoid valves equipped with a surge suppressor suppress the terminal-to-terminal reverse voltage surge generating upon shutoff, to the level shown in the table below.

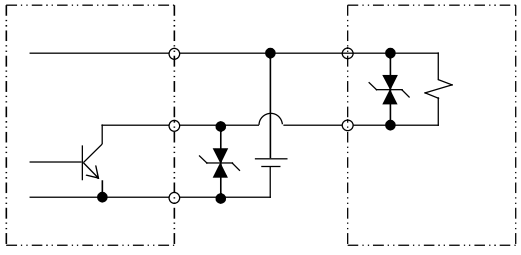
In case of 12VDC	About 27V
In case of 24VDC	About 47V

b) If the output unit is of an NPN type, the output transistor is susceptible to the sum of the voltage specified in the table above and the source voltage. Install a contact protection circuit.

<Example 1 of output transistor protection circuit>



<Example 2 of output transistor protection circuit>



(1) With a double solenoid type valve system, energize the solenoid for at least 0.1 second even for an instantaneous valve operation. If the target valve can be affected by a back pressure induced by another solenoid valve, it is recommendable to energize the solenoid as long as the cylinder is making an action.

(2) If solenoids are energized for a prolonged period of time, the surface temperature of the manifold will rise. Through this increase in the temperature should not be regarded as abnormal, provide a suitable means of ventilation or heat release.

5.4.2 The type with a built-in low heat generation and power saving circuit

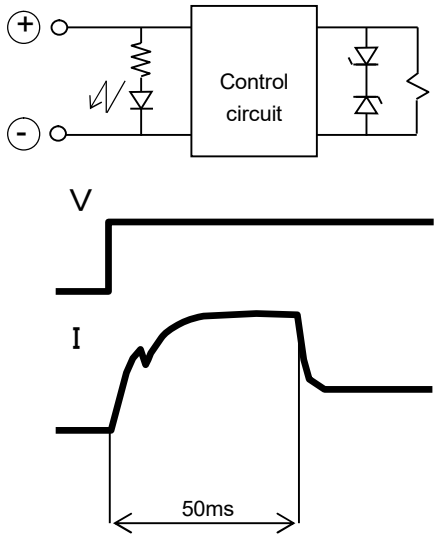
1) In the environment such that more vibration and impulse than specified are applied, be sure to avoid using this type; otherwise, it may lead to valve malfunctioning.
The low heating & power saving circuit built-in type is such that the current control circuit is built in the valve block, which is constructed so that the current value is reduced when coil adsorption is maintained.

Low heating & power saving circuit built-in type

Item			Description	
			N4E0	N4E00
Energized current A	At startup	DC24V	0.025	0.017
		DC12V	0.050	0.033
	At holding	DC24V	0.013	0.009
		DC12V	0.025	0.018
Power consumption W	At startup	DC24V	0.6	0.4
		DC12V		
	At holding	DC24V	0.3	0.22

The conducting polarity is positive common only.

Individual Specifications



2) Continuous energizing for long periods may accelerate degradation of the solenoid valve. Use E option（Low exoergic/energy saving circuit）when energizing thes device continuously. Furthermore, use caution under the following working conditions, as with continuous energization:
- When performing continuous energizing for a long period of time or When the energizing time in a single day will be longer than the non-energized time.

Install with an eye to heat dissipation.

6. MAINTENANCE

6.1 Periodic Inspection

WARNING: Before providing a maintenance service, cut the power and the supply of compressed air and confirm the absence of residual pressure.
- The above is required to ensure safety.

CAUTION: Regularly perform the daily and periodic inspections to correctly maintain product performance.
- If the product is not correctly maintained , product performance may deteriorate dramatically, resulting in a shorter service life, fractures of components, and malfunctions.

1) To use the solenoid valve system under optimum conditions, perform a periodic inspection once or twice a year.

2) Check the screws for loosening and the joints in the piping for integrity of the sealing. Regularly remove the drain from the air filters.

(1) Checking the compressed air supply pressure:
Is the supply pressure at the specified level?
Does the pressure gauge indicate the specified pressure when the system is operating?
(2) Checking the air filters:
Is the drain normally discharged?
Is the amount of dirt attached to the bowl and element at a normal level?
(3) Checking joints in the piping for the leakage of compressed air:
Are the pipes normally connected at joints, especially at the movable parts?
(4) Checking the operation of solenoid valves:
Is not there any delay in the operation? Is the exhaust flow normal?
(5) Checking the operation of pneumatic actuators:
Is the operation smooth?
Does the actuator stop normally at the end of the stroke?
Is the coupling with the load normal?
(6) Checking the lubricator:
Is the amount of oil adjusted properly?
(7) Checking the lubrication oil:
Is the supplied lubrication oil of the type specified by the manufacturer?

6.2 Disassembling and Reassembling

⚠ **WARNING : [Before increasing and decreasing the manifold, be sure to turn the power "OFF" and relieve the pressure.]**

The following are the procedures for replacement of the valve block due to its modification and lifetime or the like, addition of supply/exhaust block and extension work due to specification changes caused by different pressure configuration.

Prior to disassembling work, do not forget to stop power supply and pneumatic source supply. Also, where disassembling and reassembling works, etc. were conducted, air leakage and malfunctioning may result unless the concatenated (connecting) key between the blocks is inserted, and the wiring & end block screw are tightened satisfactorily. Before air supply, ensure that the concatenated key between the blocks is inserted securely and it is fixed securely to the DIN rails. Where the A & B port piping is disconnected, ID marking is recommendable.

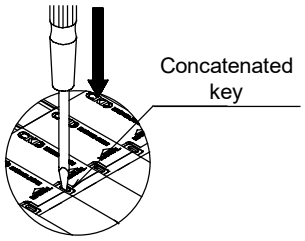
The common wiring between each valve block and signal input wiring from the electric block are connected to the valve blocks a, b in the predetermined sequence.

In replacing the block, re-check for wiring connection.

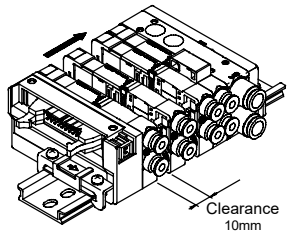
Replacement of Valve Block:

① Loosen the DIN rail fixing screw on the end block side.

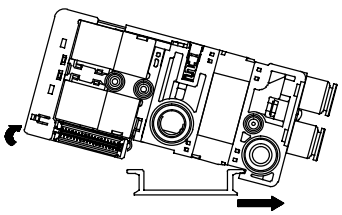
② Push the concatenated key fixing the valve block to be replaced and blocks on both sides, using a pointed tool or the like.



③ Slide the block to the end block side to produce a gap of approx. 10 mm on both sides on the block to be replaced as illustrated below.



④ Lift up the electric cover of the block and pull it to the piping port side: the unit will be detached from the DIN rails.

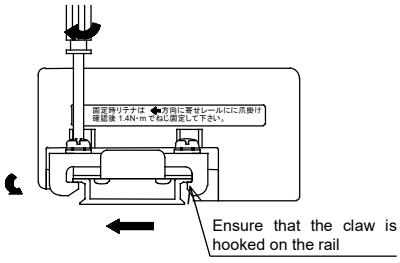


⑤ Replace the block with a new one.

⑥ Slide all blocks to the electric block side so that no gap is produced between the blocks.

⑦ Ensure that the connecting key has returned up to the groove on the block top surface.

⑧ Ensure that the end block retainer claw is hooked on both sides of DIN rail, and tighten the fixing screw with a screwdriver.
The adequate tightening torque is 1.4N･m.



Additional Mounting of Valve Block

① In the same manner as the valve block replacement, add the valve block.

② Where the valve block increase is scheduled, designate the length of DIN rail in the Specification.

Supply/exhaust block installation

① In the same manner as valve block replacement, add the valve block.

② It should be noted that the wiring system differs between the wiring-saving type and individual wiring type.

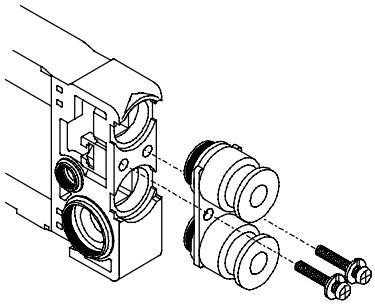
Replacement of Cartridge Joint:

① Remove the mounting screw.

② Pull the stopper plate and joint at the same time.

③ Align the groove of joint for replacement with the stopper plate for temporary assembling.

④ Assemble the stopper plate and joint simultaneously and tighten the mounting screw. By pulling the joint, check for its mounting.



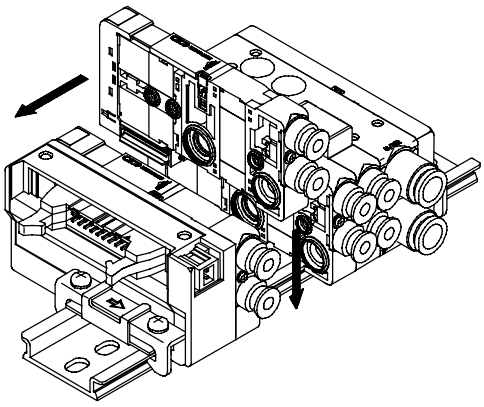
Tightening Torque
Valve block
N4E0 : 0.22±0.02N･m
N4E00 : 0.20±0.02N･m
Supply/exhaust : 0.42±0.02N･m
Regulater block : 0.42±0.02N･m

Checkup after completion of disassembly and re-assembly:

Check for wiring, and check to see if the piping is connected correctly. Give special care to wrong connection of ports A, B of the piping.

Wiring between Wiring-Saving Type Electric Block and Valve Block:

The parts called “Special wiring connector” are built in the valve block and supply/exhaust block or the like, which are designed for wiring simultaneously with manifold disassembly and reassembly.
During disassembly and reassembly, no particular wiring work is required.
The wiring structure is shown below.
Since regularity exists between connector pin No. of electric block and wired valve, check the “Wiring Method” paragraph on pages 19 to 45, and make wiring connections between the valve and control unit.
Take special care in increasing and decreasing the valve block.



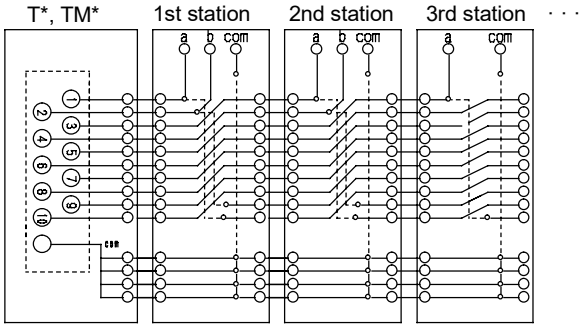
Structural Drawing for Wiring:

The following is the wiring structure for 4Eseries, which differs from the actual specifications. No double wiring mixing exists.

CAUTION: Increase the manifold within the maximum specification range for the number of manifolds. If the manifold is increased in the range exceeding the specifications, unintentional valve block motion arises, which may lead to equipment failure or the like.

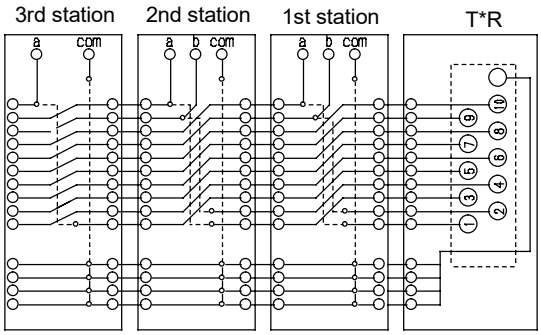
• In case of T* (left side wiring block) or TM* (intermediate wiring block) only

The valves are 1a, 1b, 2a, ..., from the valve block on the right side of the wiring block, when viewed with the port facing you.



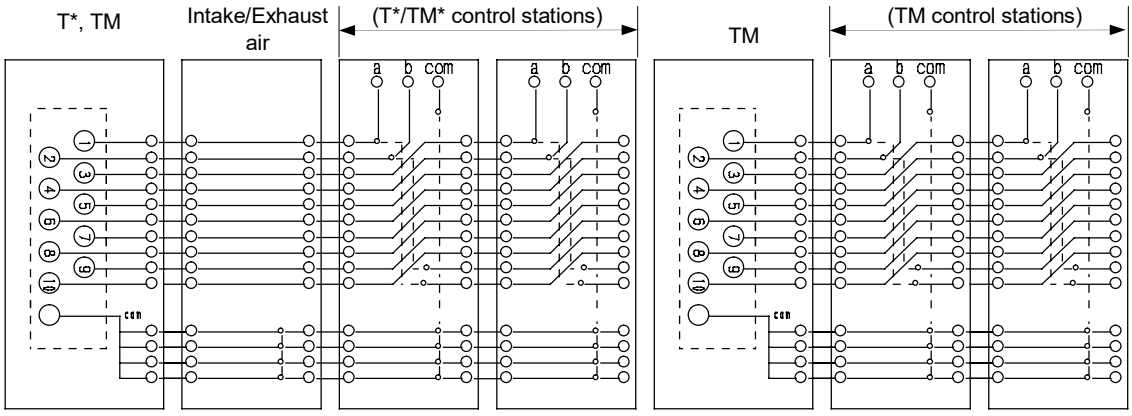
• In case of T*R (right side wiring block) only

The valves are 1a, 1b, 2a, ..., from the valve block on the left side of the wiring block, when viewed with the port facing you.



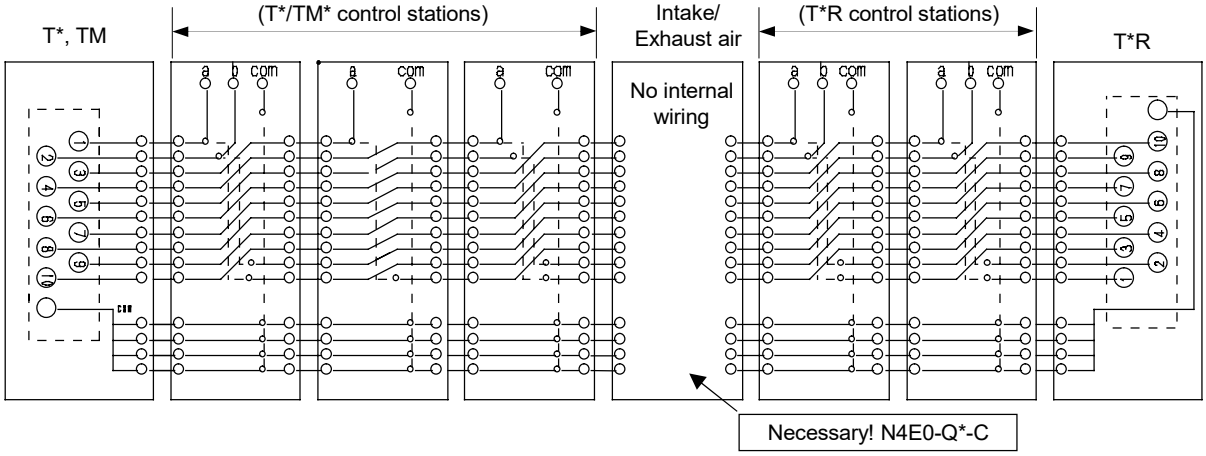
- **In case of T* (left side wiring block) or TM* (intermediate wiring block) at TX (mix) + TM (intermediate wiring block)**

  The valves are 1a, 1b, 2a, ..., from the valve block on the right side of each wiring block, when viewed with the port facing you.
  The wiring is shut off at the left side of the intermediate wiring block.



- **In case of T* (left side wiring block) or TM* (intermediate wiring block) at TX (mix) + T*R (right side wiring block)**

  There are 1a, 1b, 2a, ... arrangement from the left side wiring block and 1a, 1b, 2a, ... arrangement from the right side wiring block.
  Place intake/exhaust air block N4E0-Q*-C in the middle to avoid interference of circuits.

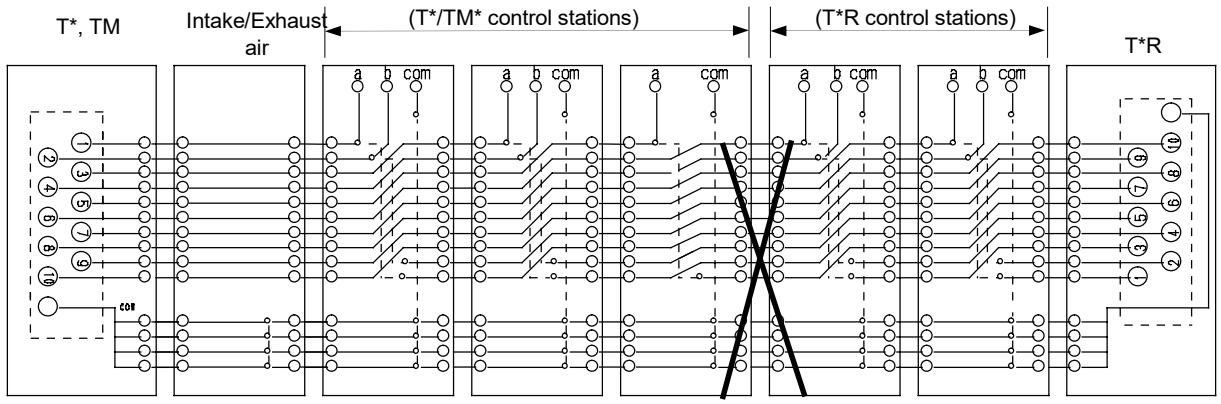


CAUTION:

Example of wrong wiring

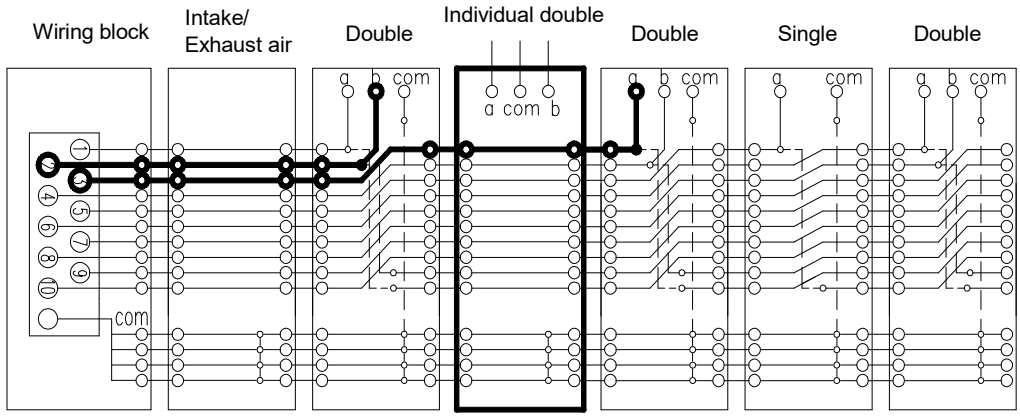
Interference of left and right wiring in the middle

The circuits in the left and right wiring blocks conduct through the manifold, possibly causing unexpected valve operations.



Wiring inside manifold for mixture with individual wiring

The internal circuit of the individual wiring valve block is completely isolated from the reduced wiring electric circuit inside the manifold. Therefore insertion of an individual wiring valve block between reduced wiring valve blocks does not cause a change in the pin layout of the wiring block related to the reduced wiring valve block.



The pin arrangement on the wiring block side is in order from station 1, excluding individual wiring.

CAUTION:

- **<u>The internal circuit of the individual wiring valve block is completely isolated from the reduced wiring electric circuit inside the manifold.</u>** Therefore insertion of an individual wiring valve block between reduced wiring valve blocks does not cause a change in the pin layout of the wiring block related to the reduced wiring valve block.

7. TROUBLESHOOTING

TROUBLESHOOTING

Motion troubles	Suspected cause	Remedies
Does not actuate	No electric signals	Turn on the power
	Damage to signal wiring system	Repair the control circuit
	Excessive fluctuating range of current or voltage	Reaffirm the power capacity. (within ±10% of voltage fluctuation)
Malfunctions	Excessive leaking current	Correct control circuit and / or set a bleed circuit
	Chattering	Inspect switching system and / or tighten each loosen terminal screw
	Voltage deviates than specified on the name plate	Rectify the voltage to meet the specification
	Damaged or short circuited coil	Replace the coil
	Erroneous shut off pressure source	Turn on the power source
	Insufficient pressure	Reset the pressure reducer valve or install a pressure raising valve
	Insufficient flow of fluid	Rectify the size of pipe or install a surge tank
	Pressure supplied through exhaust port	Change the piping to an external pilot system
	Erroneous piping, erroneous omitting some piping	Rectify the piping system
	Speed control valve completely closed by error	Reset the needle valve
	A port B port is directly released to an open air	Install pipe joints to A and B ports with diameter equal to or smaller than that of to P port joint
	Valve is frozen	Add remedies of avoiding freezing (Heating system or dehumidifying system etc.)
	Delayed return of a plunger (Excessive oil, existence of far)	Check the quality of the lubricant (Turbine oil type1, ISO VG 32 or equivalent) Rectify the quantity of lubricant drip Install a tar removing filter
	Clogged-up exhausting port with dust	Install a cover or silencer and clean it regularly
High actuating pressure is required	Bulged or decomposed packings	Check the quality of the lubricant (Turbine oil type1, ISO VG 32 or equivalent) Relocate the valves away from splashing area of cutting coolant Keep organic chemicals away from valves.
	Release of A and / or B port to an open air directly	Check the piping. Apply more grease.
	Foreign particles cut into packing lips	Replace the valve

8. PRODUCT SPECIFICATIONS AND HOW TO ORDER

8.1 Product Specifications

1) Common Specifications

Item		Description
Manifold common specifications		Block manifold
Manifold type		Central supply / central exhaust (built-in integrated exhaust check valve)
Working fluid		Compressed air
Actuation		Pilot operation
Valve structure		Soft spool valve
Max. working pressure	MPa	0.7
Min. working pressure	MPa	0.2
Proof pressure	MPa	1.05
Ambient temperature	°C	5 to 55
Fluid temperature	°C	5 to 55
Manual override		Lock ・Non-Lock Type/ Non-Lock exclusive Type
Lubrication		Not required
Degree of protection		Dust proof
Vibration resistance	m/s^2	50 or less
Shock resistance	m/s^2	300 or less
Atmosphere		Not available in corrosive gas

2) Electrical specifications

Item			Description	
			N3E0／N4E0	N3E00／N4E00
Rated voltage		DC	12, 24	
Voltage fluctuation range			±10% (Serial Transmission at +10%, -5%)	
Holding current	A	DC24V	0.025 （0.013）※	0.017 （0.009）※
		DC12V	0.050 （0.025）※	0.033 （0.018）※
Power consumption	W	DC24V	0.6 （0.3）※	0.4 （0.22）※
		DC12V		
Thermal class			B	
Surge suppressor			Equipped as standard	
Indicator			indicator light	

※ Valve blocks with a built-in individual power supply (AUX) function or a built-in low heat generation and power saving circuit, or individual wiring types with a built-in low heat generation and power saving circuit, are positive common only.

3) Specification for different models

(1) N3E0/N4E0

Port type / Item			3 Port valve	4 Port valve	Two 3-port valves built-in type ※3
Port size	A / B Port		φ1.8, φ4, φ6 push-in joint, M5, CF		
	P / R Port		φ6, φ8 push-in joint		
	External pilot port		φ6 push-in joint		
c : Flow characteristics dm³/(S・bar) / b :Critical pressure ratio ※1	2 position		0.54/0.12	0.54/0.12	0.50/0.16
	3 position	Closed center		0.50/0.08	—
		A・B・R Ex center	—	0.54/0.12	—
		P・A・B Pressure center	—	0.50/0.11	—
Response time ms ※2	2 position single		20 or less	20 or less	12 or less
	2 position double		12 or less	12 or less	—
	3 position		—	20 or less	—

(2) N3E00/N4E00

Port type / Item			3 Port valve	4 Port valve	Two 3-port valves built-in type ※3
Port size	A / B Port		φ1.8, φ3, φ4push-in joint, M3, CF		
	P / R Port		φ6, φ8 push-in joint		
	External pilot port		φ6 push-in joint		
c : Flow characteristics dm³/(S・bar) / b :Critical pressure ratio ※1	2 position	P→A・B	0.30 / 0.20	0.30 / 0.20	0.30 / 0.20
		A・B→R	0.32 / 0.20	0.32 / 0.24	0.32 / 0.24
Response time ms ※2	2 position single		20 or less	20 or less	20 or less
	2 position double		20 or less	20 or less	—

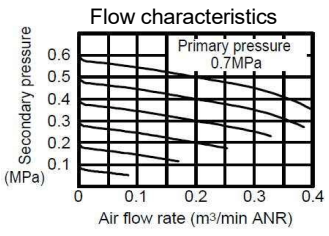
※1 Flow characteristics for the Standard type (with check valve) Effective sectional area :S≒5.0

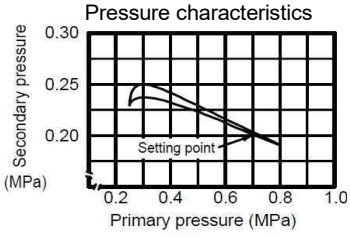
※2 Response time when supply pressure is 0.5MPa, On and not lubricated.

※3 Two 3-port valves built-in type cannot be used in external pilot since the main pressure is utilized for valving element motion. Also, secure satisfactory air supply flow rate so that the supply pressure is not lower than the minimum working pressure due to motion of connecting load (air-operated valve), etc.

4) Regulator block specification

Item	Description
Set pressure	0.05 to 0.7 ※4
Pressure relief	With relief mechanism





※4 Be careful that main(P)pressure doesn't become more than pilot(PA)pressure when you use Two 3 -port valves built-in type.
Be careful that main(P)pressure doesn't become less than 0.2MPa when you use Two 3 -port valves built-in type.

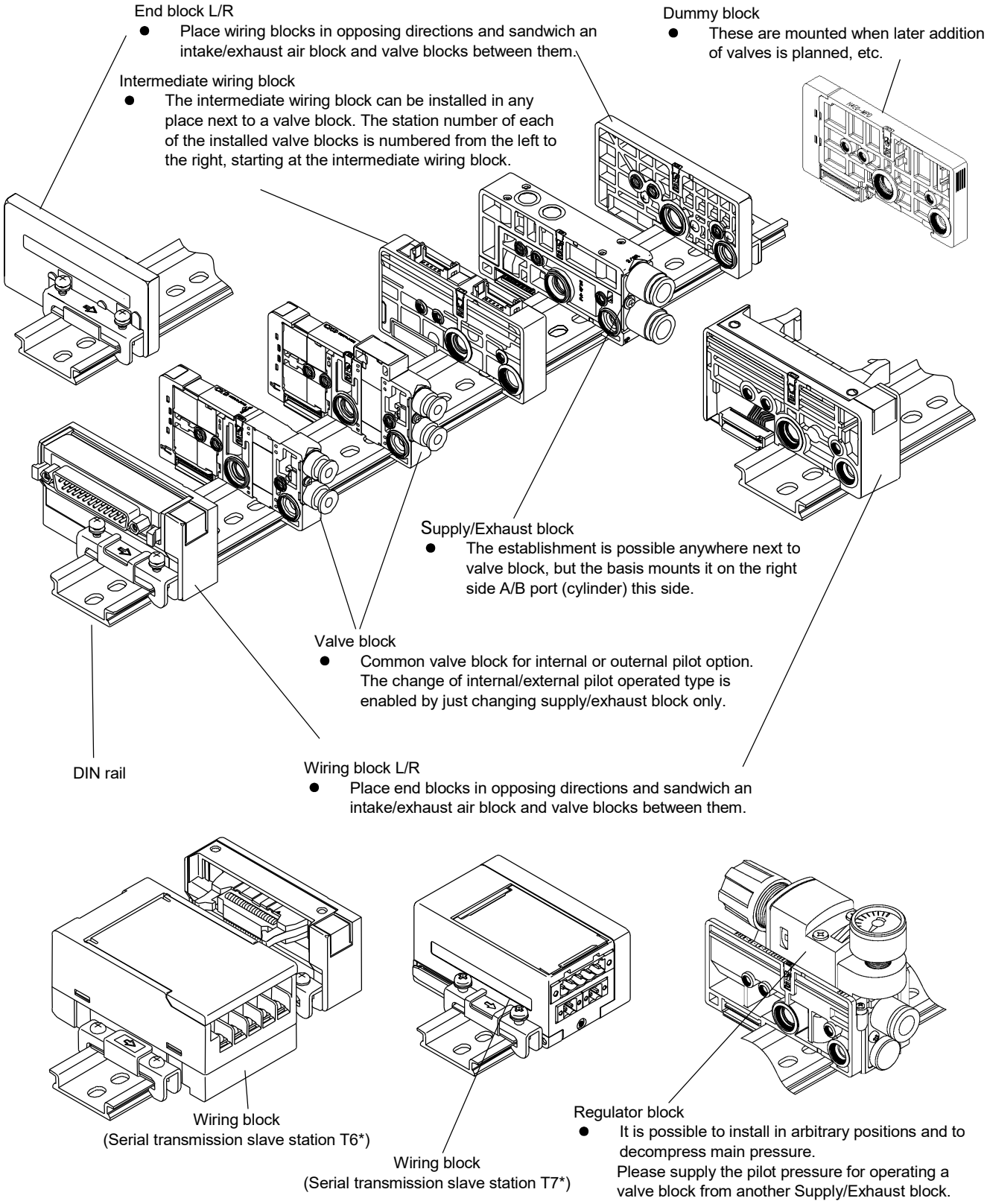
5) Weight

Wiring Block (g)			D-sub connector type T30(R)	Flat cable connector type T5※(R)	Intermediate wiring block		Serial Transmission		
					TM1*	TM52	T6*	T7*	
			67	59	32	34	205	128	
Supply/ Exhaust Block (g)			Q / QZ	QK	QKZ		QX		QKX
		Joint Side	64	69	79		56		61
		Joint Top	90	94	98		62		66
Valve Block (g)			2 Position single	2 Position double	3 Position		Two 3-port valves built-in type		
	N3E0 N4E0	Joint Side	47.5	52	53.5		52		
		Joint Top	54.5	59	60.5		59		
	N3E00 N4E00	Joint Side	31.5	35	—		35		
		Joint Top	37.5	41	—		41		
End block (g)			ER / EL						
			40						
DIN Rail (g)			—						
			0.9g / mm						
Regulator Block (g)			With no joint	With a joint.					
			124	132					

8.2 How to Order

1) Block Manifold : Block Parts construction

Increase of no. of station, maintenance are possible order to assemble freely.



2) How to order of Manifold

（1） MN3E0／MN4E0

D-sub connector, flat cable connector and intermediate wiring block

* For the serial transmission type, refer to pages 71 to 73.

- Simple substance of a valve block

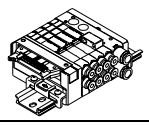
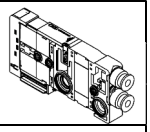
N 3 E0 66 0 – C4 —— M　　D2 F —— 3

- Block manifold

M N 4 E0 1 0 – C4 – R – M T53 D2 W F – 5 – 3

DIN rail mount type

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k)

Symbol	Description		Type: Block manifold	Type: Simple substance of a valve block
				
(a) Valve type				
3	3 Port valve, Dual 3 Port valve		●	●
4	4 Port valve, 3/4 Port valve mix		●	●
(b) Switching positions				
1	3 port valve	2 Position single normally closed	●	●
11		2 Position single normally open (Differential pressure spring return)	●	●
2		2 Position double normally closed	●	●
21		2 Position double normally open	●	●
66	Two 3 -port valves built-in type	A Side valve : Normally closed B Side valve : Normally closed	●	●
		(Differential pressure return)	●	●
66S		(Differential pressure spring return)	●	●
			●	●
67		A Side valve : Normally closed B Side valve : Normally open	●	●
		(Differential pressure return)	●	●
67S		(Differential pressure spring return)	●	●
			●	●
76		A Side valve : Normally open B Side valve : Normally closed	●	●
		(Differential pressure return)	●	●
76S		(Differential pressure spring return)	●	●
			●	●
77		A Side valve : Normally open B Side valve : Normally open	●	●
		(Differential pressure return)	●	●
77S		(Differential pressure spring return)	●	●
			●	●
1	4 Port valve	2 Position single (Differential pressure spring return)	●	●
2		2 Position double	●	●
3		3 Position closed center	●	●
4		3 Position exhaust center	●	●
5		3 Position pressure center	●	●
8	Mixed manifold		●	

D-sub connector, flat cable connector and intermediate wiring block

* For the serial transmission type, refer to pages 71 to 73.

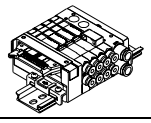
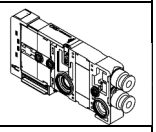
- Simple substance of a valve block

N 3 E0 66 0 – C4 —— M D2 F —— 3

- Block manifold

M N 4 E0 1 0 – C4 – R – M T53 D2 W F – 5 – 3

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
DIN rail mount type											

Symbol	Description	Type: Block manifold	Type: Simple substance of a valve block
			
(c) Port size			
CF	ϕ1.8 barbed joint (Response tube UP-9102-※※)	●	●
C18	ϕ1.8 push-in joint Side (Response tube UP-9402-※※)	●	●
CL18	ϕ1.8 push-in joint Top (Response tube UP-9402-※※)	●	●
C4	ϕ4 push-in joint Side	●	●
CL4	ϕ4 push-in joint Top	●	●
C6	ϕ6 push-in joint Side	●	●
CL6	ϕ6 push-in joint Top	●	●
M5	M5 Female screw (with anti-rotating)	●	●
CX	Mix push in joint	●	●
(d) Pressure adjustment function			
(No code)	(None)	●	
R	Equipped with regulator	●	
(e) Manual override			
(No code)	Non-locking / locking common type (With protection cover)	●	●
M	Non-locking type (With protection cover)	●	●
(f) Reduced wiring connection			
T30	25-pin,D-sub connector left side	●	
T30R	25-pin,D-sub connector right side	●	
T50	20-pin,flat cable connector left side (with power supply terminal)	●	
T50R	20-pin,flat cable connector right side (with power supply terminal)	●	
T51	20-pin,flat cable connector left side	●	
T51R	20-pin,flat cable connector right side	●	
T52	10-pin,flat cable connector left side	●	
T52R	10-pin,flat cable connector right side	●	
T53	26-pin,flat cable connector left side	●	
T53R	26-pin,flat cable connector right side	●	
TM1A	Intermediate wiring block for 10-point AMP connector	●	
TM1C	Intermediate wiring block for 5-point AMP connector	●	
TM52	Intermediate wiring block for 8-point 10-pin flat cable connector	●	
TX	Electric block mix	●	
No code	Reduced wiring valve block		●

D-sub connector, flat cable connector and intermediate wiring block

- Simple substance of a valve block

* For the serial transmission type, refer to pages 71 to 73.

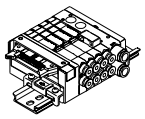
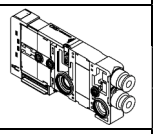
N 3 E0 66 0 – C4 —— M D2 F —— 3

- Block manifold

M N 4 E0 1 0 – C4 – R – M T53 D2 W F – 5 – 3

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k)

DIN rail mount type

Symbol	Description		Type: Block manifold	Type: Simple substance of a valve block
				
(g) Reduced wiring connection				
(No code)	Standard wiring (for reduced wiring)			●
D2	Individual wiring type	D-type connector 300mm	●	●
D20		D-type connector 500mm	●	●
D21		D-type connector 1000mm	●	●
D22		D-type connector 2000mm	●	●
D23		D-type connector 3000mm	●	●
D2N		D-type connector without socket	●	●
D3		D-type connector, with socket and terminal attached	●	●
(h) Terminal and connector pin array				
(No code)	Standard wiring		●	●
W	Double wiring		●	●
(i) Option				
(No code)	(None)		●	●
E	Type with built-in low heat generation and power saving circuit*		●	●
U	Type with built-in individual power supply (AUX) function*		●	●
A	Ozone proof		●	●
F	Built-in A-/B-port filter		●	●
(j) Station number				
1	1 station		●	
|	|			
24	24 stations			
(k) Voltage				
3	24VDC		●	●
4	12VDC		●	●

* 1. Valve blocks with a built-in individual power supply (AUX) function or a built-in low heat generation and power saving circuit, or individual wiring types with a built-in low heat generation and power saving circuit are positive common only.

2. Simultaneous selection of option U (AUX) and E (type with built-in low heat generation and power saving circuit), or option D (individual wiring) and U (AUX) is prohibited. Be careful.

Serial Transmission

* For the D-sub connector, flat cable connector and intermediate wiring type, refer to pages 68 to 70.

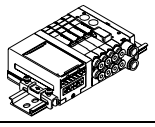
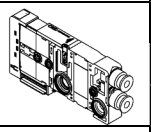
- Simple substance of a valve block

N 3 E0 66 0 – C4 —— M D2 F —— 3

- Block manifold

M N 4 E0 1 0 – C4 – R – M T7D2 D2 W F – 5 – 3

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
DIN rail mount type											

Symbol	Description		Type: Block manifold	Type: Simple substance of a valve block
				
(a) Valve type				
3	3 Port valve, Dual 3 Port valve		●	●
4	4 Port valve, 3/4 Port valve mix		●	●
(b) Switching positions				
1	3 port valve: 2 Position single normally closed	(Differential pressure spring return)	●	●
11	3 port valve: 2 Position single normally open	(Differential pressure spring return)	●	●
2	3 port valve: 2 Position double normally closed		●	●
21	3 port valve: 2 Position double normally open		●	●
66	Two 3 -port valves built-in type: A Side valve : Normally closed, B Side valve : Normally closed	(Differential pressure return)	●	●
			●	●
66S		(Differential pressure spring return)	●	●
			●	●
67	Two 3 -port valves built-in type: A Side valve : Normally closed, B Side valve : Normally open	(Differential pressure return)	●	●
			●	●
67S		(Differential pressure spring return)	●	●
			●	●
76	Two 3 -port valves built-in type: A Side valve : Normally open, B Side valve : Normally closed	(Differential pressure return)	●	●
			●	●
76S		(Differential pressure spring return)	●	●
			●	●
77	Two 3 -port valves built-in type: A Side valve : Normally open, B Side valve : Normally open	(Differential pressure return)	●	●
			●	●
77S		(Differential pressure spring return)	●	●
			●	●
1	4 Port valve: 2 Position single	(Differential pressure spring return)	●	●
2	4 Port valve: 2 Position double		●	●
3	4 Port valve: 3 Position closed center		●	●
4	4 Port valve: 3 Position exhaust center		●	●
5	4 Port valve: 3 Position pressure center		●	●
8	Mixed manifold		●	

Serial Transmission

- Simple substance of a valve block

N 3 E0 66 0 – C4 ——— M

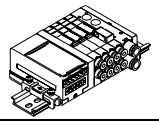
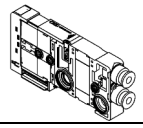
* For the D-sub connector, flat cable connector and intermediate wiring type, refer to pages 68 to 70.

D2 ( ) F ——— 3

- Block manifold

M N 4 E0 1 0 – C4 – R – M T7D2 D2 W F – 5 – 3

(a) DIN rail mount type; (b); (c); (d); (e); (f); (g); (h); (i); (j); (k)

Symbol	Description	Block manifold	Simple substance of a valve block
			
(c) Port size			
CF	ϕ1.8 barbed joint (Response tube UP-9102-※※)	●	●
C18	ϕ1.8 push-in joint Side (Response tube UP-9402-※※)	●	●
CL18	ϕ1.8 push-in joint Top (Response tube UP-9402-※※)	●	●
C4	ϕ4 push-in joint Side	●	●
CL4	ϕ4 push-in joint Top	●	●
C6	ϕ6 push-in joint Side	●	●
CL6	ϕ6 push-in joint Top	●	●
M5	M5 Female screw (with anti-rotating)	●	●
CX	Mix push in joint	●	●
(d) Pressure adjustment function			
(No code)	(None)	●	
R	Equipped with regulator	●	
(e) Manual override			
(No code)	Non-locking / locking common type (With protection cover)	●	●
M	Non-locking type (With protection cover)	●	●
(f) Reduced wiring connection			
T6A0	Uni-wire system 8 points	●	
T6A1	Uni-wire system 16 points	●	
T6C0	Omron Compobus/S 8 points	●	
T6C1	Omron Compobus/S 16 points	●	
T6E0	SUNX S-LINK 8 points	●	
T6E1	SUNX S-LINK 16 points	●	
T6J0	Uni-wire / H-system 8 points	●	
T6J1	Uni-wire / H-system 16 points	●	
T6G1	CC-Link 16 points	●	
T7D1	Close contact type DeviceNet 16 points	●	
T7D2	Close contact type DeviceNet 32 points	●	
T7G1	Close contact type CC-Link 16 points	●	
T7G2	Close contact type CC-Link 32 points	●	
T7N1	Close contact type SUNX S-LINK V 16 points	●	
T7N2	Close contact type SUNX S-LINK V 32 points	●	
No code	Reduced wiring valve block		●

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Serial Transmission

* For the D-sub connector, flat cable connector and intermediate wiring type, refer to pages 68 to 70

- Simple substance of a valve block

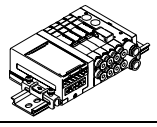
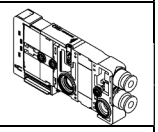
N 3 E0 66 0 – C4 —— M D2 ( ) F —— 3

- Block manifold

M N 4 E0 1 0 – C4 – R – M T7D2 D2 W F – 5 – 3

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k)

DIN rail mount type

		Type	
		Block manifold	Simple substance of a valve block
			
Symbol	Description		
(g) Reduced wiring connection			
(No code)	Standard wiring (for reduced wiring)		●
D2	Individual wiring type: D-type connector 300mm	●	●
D20	Individual wiring type: D-type connector 500mm	●	●
D21	Individual wiring type: D-type connector 1000mm	●	●
D22	Individual wiring type: D-type connector 2000mm	●	●
D23	Individual wiring type: D-type connector 3000mm	●	●
D2N	Individual wiring type: D-type connector without socket	●	●
D3	Individual wiring type: D-type connector, with socket and terminal attached	●	●
(h) Terminal and connector pin array			
(No code)	Standard wiring	●	●
W	Double wiring	●	●
(i) Option			
(No code)	(None)	●	●
E	Type with built-in low heat generation and power saving circuit	●	●
U	Type with built-in individual power supply (AUX) function	●	●
A	Ozone proof	●	●
F	Built-in A-/B-port filter	●	●
(j) Station number			
1	1 station	●	
|	|		
32	32 stations		
(k) Voltage			
3	24VDC	●	●

* 1. Valve blocks with a built-in individual power supply (AUX) function or a built-in low heat generation and power saving circuit, or individual wiring types with a built-in low heat generation and power saving circuit are positive common only.

2. Simultaneous selection of option U (AUX) and E (type with built-in low heat generation and power saving circuit), or option D (individual wiring) and U (AUX) is prohibited. Be careful.

(2) MN3E00／MN4E00

D-sub connector, flat cable connector and intermediate wiring block

* For the serial transmission type, refer to pages 77 to 79.

- Simple substance of a valve block

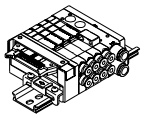
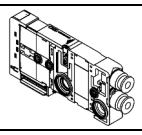
N (3) E00 (6) 0 – (C3) —— (M)　　( ) (F) —— (3)

- Block manifold

M (4) E00 (1) 0 – (C3) – (R) – (M) (T53) (W) (F) – (5) – (3)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)

M: DIN rail mount type

Symbol	Description			Type: Block manifold	Type: Simple substance of a valve block
					
(a) Valve type					
3	3 Port valve, Dual 3 Port valve			●	●
4	4 Port valve, 3/4 Port valve mix			●	●
(b) Switching positions					
1	3 port valve	2 Position single normally closed	(Differential pressure spring return)	●	●
11		2 Position single normally open		●	●
2		2 Position double normally closed		●	●
21		2 Position double normally open		●	●
66	Two 3 -port valves built-in type	A Side valve : Normally closed B Side valve : Normally closed	(Differential pressure return)	●	●
				●	●
66S			(Differential pressure spring return)	●	●
				●	●
67		A Side valve : Normally closed B Side valve : Normally open	(Differential pressure return)	●	●
				●	●
67S			(Differential pressure spring return)	●	●
				●	●
76		A Side valve : Normally open B Side valve : Normally closed	(Differential pressure return)	●	●
				●	●
76S			(Differential pressure spring return)	●	●
				●	●
77		A Side valve : Normally open B Side valve : Normally open	(Differential pressure return)	●	●
				●	●
77S			(Differential pressure spring return)	●	●
				●	●
1	4 Port valve	2 Position single	(Differential pressure spring return)	●	●
2		2 Position double		●	●
8	Mixed manifold			●	
(c) Port size					
C18	φ1.8 push-in joint Side		(Response tube UP-9402-※※)	●	●
CL18	φ1.8 push-in joint Top		(Response tube UP-9402-※※)	●	●
C3	φ3 push-in joint Side			●	●
CL3	φ3 push-in joint Top			●	●
C4	φ4 push-in joint Side			●	●

D-sub connector, flat cable connector and intermediate wiring block

* For the serial transmission type, refer to pages 77 to 79.

- Simple substance of a valve block

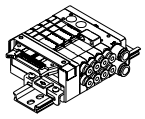
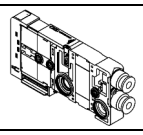
N (3) E00 (6) 0 – (C3) —— (M) ( ) (F) —— (3)

- Block manifold

M (4) E00 (1) 0 – (C3) – (R) – (M) (T53) (W) (F) – (5) – (3)

DIN rail mount type

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)

		Type	
		Block manifold	Simple substance of a valve block
			
Symbol	Description		
(c) Port size connection			
CL4	ϕ4 push-in joint Top	●	●
M3	M3 Female screw (with anti-rotating)	●	●
CX	Mix push in joint	●	●
(d) Pressure adjustment function			
(No code)	(None)	●	
R	Equipped with regulator	●	
(e) Manual override			
(No code)	Non-locking / locking common type (With protection cover)	●	●
M	Non-locking type (With protection cover)	●	●
(f) Reduced wiring connection			
T30	25-pin,D-sub connector left side	●	
T30R	25-pin,D-sub connector right side	●	
T50	20-pin,flat cable connector left side (with power supply terminal)	●	
T50R	20-pin,flat cable connector right side (with power supply terminal)	●	
T51	20-pin,flat cable connector left side	●	
T51R	20-pin,flat cable connector right side	●	
T52	10-pin,flat cable connector left side	●	
T52R	10-pin,flat cable connector right side	●	
T53	26-pin,flat cable connector left side	●	
T53R	26-pin,flat cable connector right side	●	
TM1A	Intermediate wiring block for 10-point AMP connector	●	
TM1C	Intermediate wiring block for 5-point AMP connector	●	
TM52	Intermediate wiring block for 8-point 10-pin flat cable connector	●	
TX	Electric block mix	●	
No code	Reduced wiring valve block		●

D-sub connector, flat cable connector and intermediate wiring block

* For the serial transmission type, refer to pages 77 to 79.

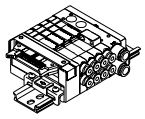
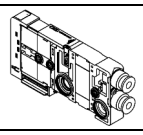
- Simple substance of a valve block

N (3) E00 (6) 0 – (C3) ——— (M) ( ) (F) ——— (3)

- Block manifold

MN (4) E00 (1) 0 – (C3) – (R) – (M) (T53) (W) (F) – (5) – (3)

DIN rail mount type | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j)

Symbol	Description	Type: Block manifold	Type: Simple substance of a valve block
			
(g) Terminal and connector pin array			
(No code)	Standard wiring	●	●
W	Double wiring	●	●
(i) Option			
(No code)	(None)	●	●
E	Type with built-in low heat generation and power saving circuit*	●	●
F	Built-in A-/B-port filter	●	●
(j) Station number			
1	1 station	●	
|	|		
24	24 stations		
(k) Rated voltage			
3	24VDC	●	●
4	12VDC	●	●

1. Valve blocks with a built-in low heat generation and power saving circuit, or individual wiring types with a built-in low heat generation and power saving circuit are positive common only.

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Serial Transmission

* For the D-sub connector, flat cable connector and intermediate wiring type, refer to pages 68 to 70

- Simple substance of a valve block

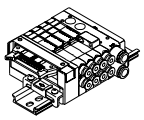
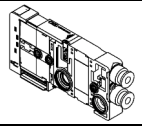
N 3 E00 66 0 – C3 ——— M ( ) F ——— 3

- Block manifold

MN 4 E00 1 0 – C3 – R – M T7D2 W F 5 – 3

DIN レール マウント方式

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)

Symbol	Description			Type: Block manifold	Type: Simple substance of a valve block
					
(a) Valve type					
3	3 Port valve, Dual 3 Port valve			●	●
4	4 Port valve, 3/4 Port valve mix			●	●
(b) Switching positions					
1	3 port valve	2 Position single normally closed	(Differential pressure spring return)	●	●
11		2 Position single normally open		●	●
2		2 Position double normally closed		●	●
21		2 Position double normally open		●	●
66	Two 3 -port valves built-in type	A Side valve : Normally closed B Side valve : Normally closed	(Differential pressure return)	●	●
				●	●
66S			(Differential pressure spring return)	●	●
				●	●
67		A Side valve : Normally closed B Side valve : Normally open	(Differential pressure return)	●	●
				●	●
67S			(Differential pressure spring return)	●	●
				●	●
76		A Side valve : Normally open B Side valve : Normally closed	(Differential pressure return)	●	●
				●	●
76S			(Differential pressure spring return)	●	●
				●	●
77		A Side valve : Normally open B Side valve : Normally open	(Differential pressure return)	●	●
				●	●
77S			(Differential pressure spring return)	●	●
				●	●
1	4 Port valve	2 Position single	(Differential pressure spring return)	●	●
2		2 Position double		●	●
8	Mixed manifold			●	
(c) Port size					
C18	φ 1.8 push-in joint Side		(Response tube UP-9402-※※)		
CL18	φ 1.8 push-in joint Top		(Response tube UP-9402-※※)	●	●
C3	φ 3 push-in joint Side			●	●
CL3	φ 3 push-in joint Top			●	●
C4	φ 4 push-in joint Side			●	●

Serial Transmission

* For the D-sub connector, flat cable connector and intermediate wiring type, refer to pages 68 to 70

- Simple substance of a valve block

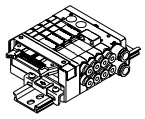
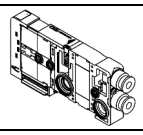
N (3) E00 (6) 0 – (C3) —— (M) ( ) (F) —— (3)

- Block manifold

MN (4) E00 (1) 0 – (C3) – (R) – (M) (T7D2) (W) (F) – (5) – (3)

DIN rail mount type

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)

Symbol	Description	Type: Block manifold	Type: Simple substance of a valve block
			
(c) Port size connection			
CL4	ϕ4 push-in joint Top	●	●
M3	M3 Female screw (with anti-rotating)	●	●
CX	Mix push in joint	●	●
(d) Pressure adjustment function			
(No code)	(None)	●	
R	Equipped with regulator	●	
(e) Manual override			
(No code)	Non-locking / locking common type (With protection cover)	●	●
M	Non-locking type (With protection cover)	●	●
(f) Reduced wiring connection			
T6A0	Uni-wire system 8 points		●
T6A1	Uni-wire system 16 points	●	
T6C0	Omron Compobus/S 8 points	●	
T6C1	Omron Compobus/S 16 points	●	
T6E0	SUNX S-LINK 8 points	●	
T6E1	SUNX S-LINK 16 points	●	
T6J0	Uni-wire / H-system 8 points	●	
T6J1	Uni-wire / H-system 16 points	●	
T6G1	CC-Link 16 points	●	
T7D1	Close contact type DeviceNet 16 points	●	
T7D2	Close contact type DeviceNet 32 points	●	
T7G1	Close contact type CC-Link 16 points	●	
T7G2	Close contact type CC-Link 32 points	●	
T7N1	Close contact type SUNX S-LINK V 16 points	●	
T7N2	Close contact type SUNX S-LINK V 32 points	●	
No code	Reduced wiring valve block		●

Serial Transmission

* For the D-sub connector, flat cable connector and intermediate wiring type, refer to pages 68 to 70

- Simple substance of a valve block

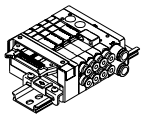
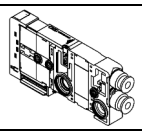
N (3) E00 (6) 0 – (C3) —— (M) (F) —— (3)

- Block manifold

MN (4) E00 (1) 0 – (C3) – (R) – (M) (T7D2) (W) (F) – (5) – (3)

DIN rail mount type

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)

		Type	
		Block manifold	Simple substance of a valve block
			
Symbol	Description		
(g) Terminal and connector pin array			
(No code)	Standard wiring	●	●
W	Double wiring	●	●
(h) Option			
(No code)	(None)	●	●
E	Type with built-in low heat generation and power saving circuit*	●	●
F	Built-in A-/B-port filter	●	●
(i) Station number			
1	1 station	●	
|	|		
32	32 stations		
(j) Rated voltage			
3	24VDC	●	●

1.Valve blocks with a built-in low heat generation and power saving circuit, or individual wiring types with a built-in low heat generation and power saving circuit are positive common only.

(3) MN3EX0／MN4EX0
MN4E0／MN4E00 Mix manifold

- Block manifold

MN (4) EX – (C4) – (R) – (M) (T53) (D2) (W) (F) – (5) – (3)

DIN rail mount type

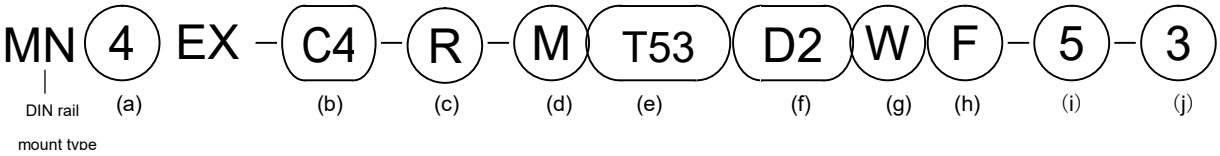
(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)

Symbol	Description
(a) Valve type	
3	3 Port valve, Dual 3 Port valve
4	4 Port valve, 3/4 Port valve mix
(b) Port size	
C18	φ1.8 push-in joint Side (Response tube UP-9402-※※)
CL18	φ1.8 push-in joint Top (Response tube UP-9402-※※)
C4	φ4 push-in joint Side
CL4	φ4 push-in joint Top
CX	Mix push in joint
(c) Pressure adjustment function	
(No code)	(None)
R	Equipped with regulator
(d) Manual override	
(No code)	Non-locking / locking common type (With protection cover)
M	Non-locking type (With protection cover)
(e) Reduced wiring connection	
(No code)	(Simple substance of a valve block)
T30	25-pin,D-sub connector left side
T30R	25-pin,D-sub connector right side
T50	20-pin,flat cable connector left side (with power supply terminal)
T50R	20-pin,flat cable connector right side (with power supply terminal)
T51	20-pin,flat cable connector left side
T51R	20-pin,flat cable connector right side
T52	10-pin,flat cable connector left side
T52R	10-pin,flat cable connector right side
T53	26-pin,flat cable connector left side
T53R	26-pin,flat cable connector right side
TM1A	Intermediate wiring block for 10-point AMP connector
TM1C	Intermediate wiring block for 5-point AMP connector
TM52	Intermediate wiring block for 8-point 10-pin flat cable connector
TX	Electric block mix

8 HOW TO ORDER

MN4E0／MN4E00 Mix manifold

- Block manifold



Symbol	Description	
(e) Reduced wiring connection		
T6A0	Uni-wire system	8 points
T6A1	Uni-wire system	16 points
T6C0	Omron Compobus/S	8 points
T6C1	Omron Compobus/S	16 points
T6E0	SUNX S-LINK	8 points
T6E1	SUNX S-LINK	16 points
T6J0	Uni-wire / H-system	8 points
T6J1	Uni-wire / H-system	16 points
T6G1	CC-Link	16 points
T7D1	Close contact type DeviceNet	16 points
T7D2	Close contact type DeviceNet	32 points
T7G1	Close contact type CC-Link	16 points
T7G2	Close contact type CC-Link	32 points
T7N1	Close contact type SUNX S-LINK V	16 points
T7N2	Close contact type SUNX S-LINK V	32 points
(f) Reduced wiring connection		
D2	Individual wiring type	D-type connector 300mm
D20		D-type connector 500mm
D21		D-type connector 1000mm
D22		D-type connector 2000mm
D23		D-type connector 3000mm
D2N		D-type connector without socket
D3		D-type connector, with socket and terminal attached
(g) Terminal and connector pin array		
(No code)		
W	Double wiring	
(h) Option		
(No code)		
E	Type with built-in low heat generation and power saving circuit	
A	Ozone proof	
F	Built-in A-/B-port filter	

1	1 stations
|	|
32	32 stations

3	24VDC
4	12VDC

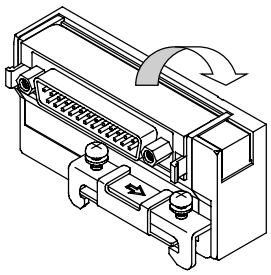
* 1.Valve blocks with a built-in low heat generation and power saving circuit, or individual wiring types with a built-in low heat generation and power saving circuit are positive common only.

3) How to order of Wiring sections

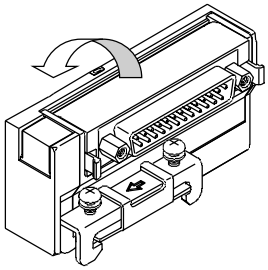
Wiring blocks

D-sub connector block (T30/T30R)

N4E0-T30



N4E0-T30R

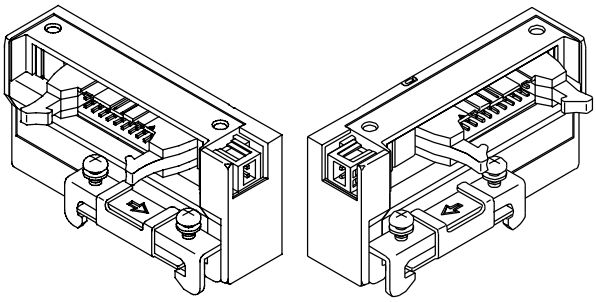


※ D-sub connector can be turned 90 degree.

Flat cable connector block (T5*/T5*R)

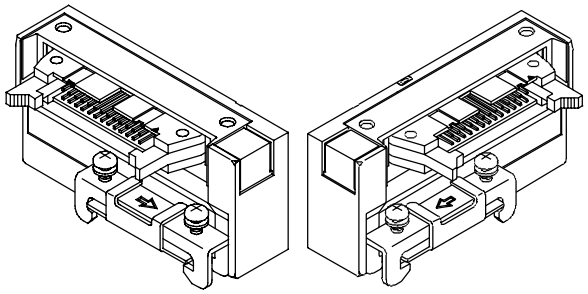
・ With power supply terminal

N4E0-T50/T50R



・ Without power supply terminal

N4E0-T51/T51R
N4E0-T52/T52R
N4E0-T53/T53R

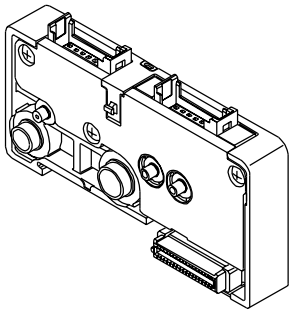


※ This drawing shows T53/T53R. T51/T51R, T52/T52R have the different numbers of pins.
(T51/T51R…20 pin, T52/T52R…10 pin, T53/T53R…26 pin)

Intermediate wiring block (TM*)

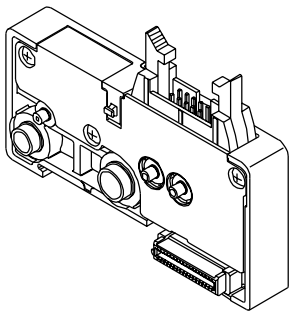
・ RITS connector type (TM1*)

N4E0-TM1A
N4E0-TM1C



・ Flat cable connector type (TM52)

N4E0-TM52



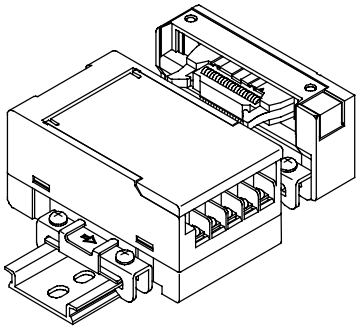
* The figure shows TM1A. The maximum number of connected points varies with TM1C.
(TM1A ... 10 points. TM1C ... 5 points)

Serial transmission block (T6※※)

N4E0 − T6G1

Series (a) Type

Symbol	Description	
(a) Type		
T6A0	Uni-wire system	8 points
T6A1	Uni-wire system	10 points
T6C0	Omron Compobus/S	8 points
T6C1	Omron Compobus/S	16 points
T6E0	SUNX S-LINK	8 points
T6E1	SUNX S-LINK	16 points
T6J0	Uni-wire / H-system	8 points
T6J1	Uni-wire / H-system	16 points
T6G1	MITUBISHI CC-Link	16 points



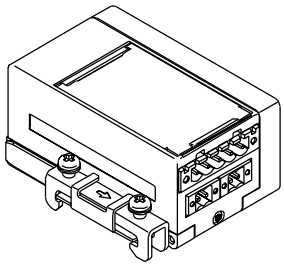
※ T6CO/1 are not applicable to the long distance communication mode.

Serial transmission block (T7※※)

N4E0 − T7D2

Series (a) Type

Symbol	Description	
(a) Type		
T7D1	Close contacttype DeviceNet	16 points
T7D2	Close contacttype DeviceNet	32 points
T7G1	Close contacttype CC-Link	16 points
T7G2	Close contacttype CC-Link	32 points
T7N1	Close contacttype S-LINK V	16 points
T7N2	Close contacttype S-LINK V	32 points



4) How to order of Piping sections

Supply / Exhaust block

- Supply / Exhaust block can be installed at any position next to a valve block. (Basically, Supply / Exhaust block is installed at right-side with the A･B (Cylinder) ports on the front side.)
- When supplying the air to Dual-3 port type Use Q-6□ or Q-8□ type. (External pilot type is not available)

N4E0 – (Q) – (8) – (SA) – (C)

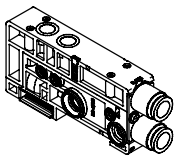
Series (a) (b) (c) (d)

(a) Type (Note 1)		(b) Port size (P / R port) (Note 2)		(c) Options		(d) Wiring specification	
Q	Internal pilot	6	φ6 push-in joint	No code	No partition	Blank	For reduced wiring
QK	External pilot	6L	φ6 push-in joint Top	S	P･R blocked, PA･PR through	C	For individual wiring
QZ	Multi pressure (Only P, R)	8	φ8 push-in joint	SA	P ･ R ･ PA ･ PR blocked		
QKZ	Multi pressure circuits, external pilot (Seperated PR and P, R, PA)	8L	φ8 push-in joint Top				
QX	Release to air (with silencer)						
QKX	External pilot, release to air (with silencer)						

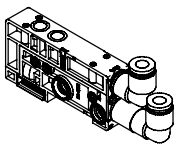
Note1 : QZ is used with Q, QK and QKZ

Note2 : Filter intergrated into P port to prevent instruction of foreign matter. (Standard)

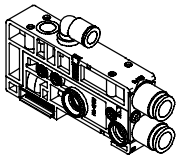
● Q-8
QZ-8



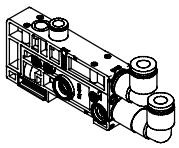
● Q-8L
QZ-8L



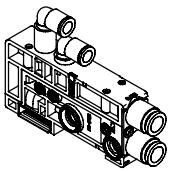
● QK-8



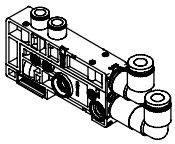
● QK-8L



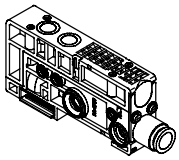
● QKZ-8



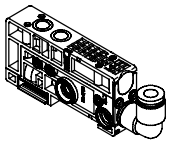
● QKZ-8L



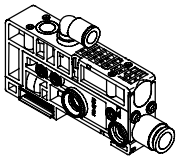
● QX-8
QXZ-8



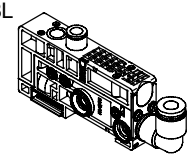
● QX-8L
QXZ-8L



● QKX-8



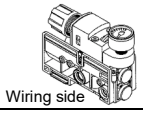
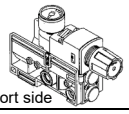
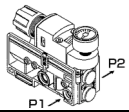
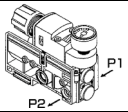
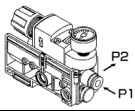
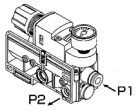
● QKX-8L



Regulator block

N4E0 – RA – FR – C8 – A

Series (a) Direction of adjustment knob (bSupply/Decompression direction (c) Port size (d) Option

(a) Direction of adjustment knob			
RA	 Wiring side	RB	 Port side
(b) Supply/Decompression direction			
LR		RL	
FR		FL	

(c) Port size	
(no code)	Plug（Supply/Decompression direction:LR,RL）
C6	ϕ6 Push-in joint,sideways（ Supply / Decompression direction :FR,FL ）
C8	ϕ8 Push-in joint,sideways（ Supply / Decompression direction :FR,FL ）
CL6	ϕ6 Push-in joint,upwards（ Adjustment knob direction :RA, and Supply / Decompression direction :FR,FL ）
CL8	ϕ8 Push-in joint,upwards（ Adjustment knob direction :RA, and Supply / Decompression direction :FR,FL ）
(d) option	
(no code)	
A	Ozone proof

※One or more Supply/Exhaust blocks for pilot air supply are required of the regulator block equipment type manifold.

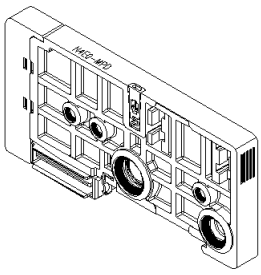
Dummy block

- These are mounted when later addition of valves is planned, etc.

N4E0 – MPS

Series (a) Type

Symbol	Description
(a) Type	
MPS	Single wiring
MPD	Double wiring



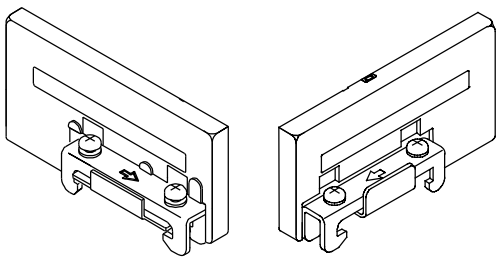
End block (Left / Right mounting)

- End block is installed at right side with the piping ports on the front side.

N4E0 – ER

Series (a) Type

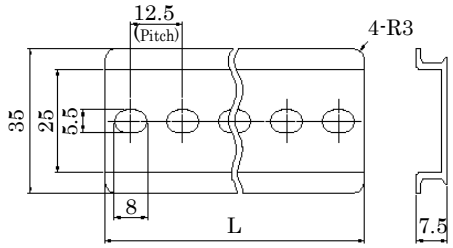
Symbol	Description
(a) Type	
EL	Installation on left side
ER	Installation on right side



5) How to order of Related products

Related products

● Mounting rail



● Power supply socket assembly (for individual wiring and AUX)

N4E0 - SOCKET – (D) – (300)

(a) (b)

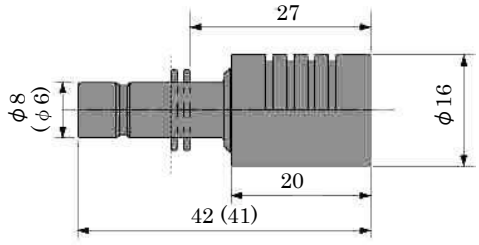
(a) Type		(b) Lead wire length	
Symbol	Description	Symbol	Description
S	2 wires (for single solenoid)	300	300mm
D	3 wires (for double solenoid)	500	500mm
		1000	1000mm
		2000	2000mm
		3000	3000mm

* The model number of the type without a lead wire is 3M0-SOCKET-SET.
(3 contacts attached, applicable wiring diameter AWG# 26 to 28)

● Silencer (Attached)

SLW-H8

SLW-H6



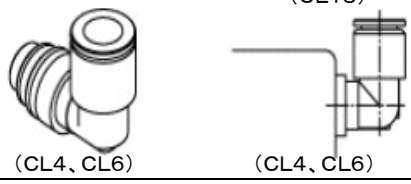
※ The value ( ) for H6.

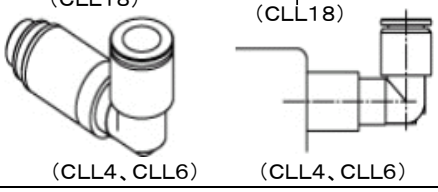
● Push in cartridge joint for a valve block

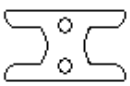
N4E0 - JOINT – C4

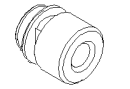
It is for the N3E0/N4E0 valve block and the supply/exhaust block PA port. It isn't available for P and R port on the supply/exhaust block

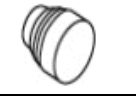
Model No.	Dimensions
C18	Push in cartridge joint for Ø1.8 tube
C4	Push in cartridge joint for Ø4 tube
C6	Push in cartridge joint for Ø6 tube
CL18	Short elbow push in cartridge joint for Ø1.8 tube
CL4	Short elbow push in cartridge joint for Ø4 tube
CL6	Short elbow push in cartridge joint for Ø6 tube
CLL18	Long elbow push in cartridge joint for Ø1.8 tube
CLL4	Long elbow push in cartridge joint for Ø4 tube
CLL6	Long elbow push in cartridge joint for Ø6 tube
CF	Barbed in cartridge joint for Ø1.8 tube .
CPG	Plug cartridge
CP	Fitting fixed plate. (Mounting screw attached.)
CM5	M5 Cartridge (Anti-rotating plate is required.)
CMB	Cartridge plug for M5 cartridge (Anti-rotating plate is required)
CMP	Anti- rotating plate for M5 cartridge (Mounting screw attached.)

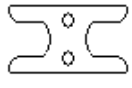








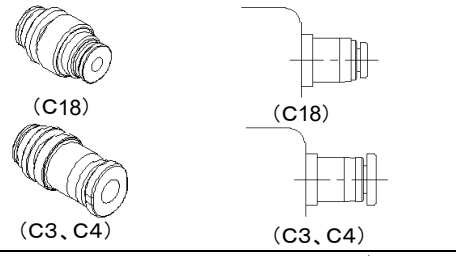




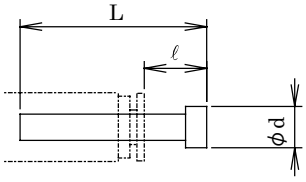
N4E00 - JOINT – C3

It is for the N3E0/N4E0 valve block.

記　号	寸　法
C18	Push in cartridge joint for Ø1.8 tube
C3	Push in cartridge joint for Ø3 tube
C4	Push in cartridge joint for Ø4 tube
CL18	Short elbow push in cartridge joint for Ø1.8 tube
CL3	Short elbow push in cartridge joint for Ø3 tube
CL4	Short elbow push in cartridge joint for Ø4 tube
CLL18	Long elbow push in cartridge joint for Ø1.8 tube
CLL3	Long elbow push in cartridge joint for Ø3 tube
CLL4	Long elbow push in cartridge joint for Ø4 tube
CPG	Plug cartridge
CP	Fitting fixed plate. (Mounting screw attached.)
CM3	M3 Cartridge (Anti-rotating plate is required.)
CMB	Cartridge plug for M3 cartridge (Anti-rotating plate is required)
CMP	Anti- rotating plate for M3 cartridge (Mounting screw attached.)

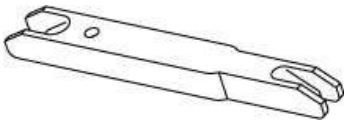


● Plug (Attached)



Model No.	D	L	l	d
PG-P2-B	1.8	20	13	5
N4E00-JOINT-PP3MW	3	22	12.7	4
GWP4-B	4	27	19	6
GWP6-B	6	29	19	8
GWP8-B	8	33	14	10

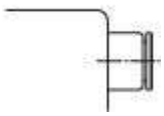
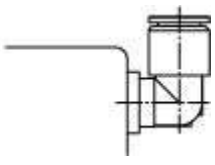
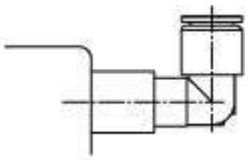
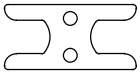
● Tube remover
- N4E0-EOT18-4 (for Ø1.8, Ø 4)
- N4S0-EOT4-6 (for Ø4, Ø 6)



● Push in cartridge joint for intake/exhaust block

N4E0 - Q - JOINT − (8)

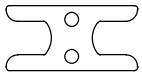
Use the one for the valve block manifold above when using pilot pressure air supply type (for PA).

Model No.	Dimensions	
6	Push in cartridge joint for Ø6 tube	 
8	Push in cartridge joint for Ø8 tube	
6L	Short elbow push in cartridge joint for Ø6 tube	 
8L	Short elbow push in cartridge joint for Ø8 tube	
6LL	Long elbow push in cartridge joint for Ø6 tube	 
8LL	Long elbow push in cartridge joint for Ø8 tube	
P	Fitting fixed plate. (Mounting screw attached.)	

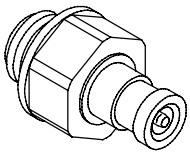
● Push in cartridge joint for regulator block

N4E0 - R - JOINT – 6

記　号	寸　　法
6	Push in cartridge joint for Ø6 tube
8	Push in cartridge joint for Ø8 tube
6L	Short elbow push in cartridge joint for Ø6 tube
8L	Short elbow push in cartridge joint for Ø8 tube
CPG	Plug cartridge
F	Filter
P	Fitting fixed plate. (Mounting screw attached.)



● ϕ 1.8 barbed　joint　(10pcs/1set)



N4E0 - JOINT – PTN2-M5

Model No.	Dimensions
PTN2-M3	M3 Screw-in joint for barbed
PTN2-M5	M5 Screw-in joint for barbed
PTN2-6	R1/8 joint for barbed

※ Contact us to using the Air fiber.

● Power supply connector for T50 power supply terminal.

N4E0 - T50 - CONNECTOR

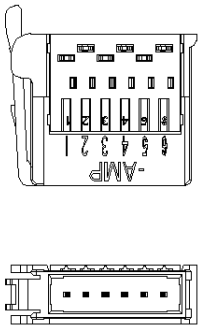
Adaptable cable : AWG28-20 / 0.08 to 0.5mm^2
(Commercial item : WAGO Connector plug 733-102)

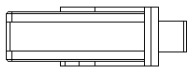
● Spare fuse for T50

4T9 - LM 16

Daitoh　LM16

● Connector for wiring block TM1 (RITS connector, 6P)





N4E0 - TM - CONNECTOR

6P RITS connector made by Tyco Electronics AMP K.K.
(Marketed part No. 1473562-6)

Applicable cables (tin plated cable recommended)

Sectional area [mm^2]	External diameter with sheath [mm]	Number and diameter of element wires [pieces/mm]
(0.08) 0.1 to 0.5	Ø0.90 to Ø1.0	To 40/0.08
	Ø1.0 to Ø1.15	To 60/0.08
	Ø1.15 to Ø1.35	To 99/0.08

(For 0.08mm^2, contact below.)

For detail specifications of the applicable cable, contact:
Sales Division, Tyco Electronics AMP K.K.
TEL 044-844-8058
URL http://www.tycoelectronics.com/japan/amp/rits/index.html
Special caulking tool 1596114-1