

Plug-in Block manifold W4G2 Series

BLOCK MANIFOLD W4G2 SERIES



W4G2 Advanced "ecological"

Incorporating high endurance and environment friendly concept, pneumatic 5 port valve plug-in block manifold W4G2 features outstanding ease of use, such as high performance of new age for maintenance and installation.

Wide product line-up with new features

- Serial transmission
- Manual override
- How to install manifold
- Electric connection
- Spacer

Compatible with CC-Link, DeviceNet and AS-1

OFF function and non-locking types available

Compatible with DIN rail mounting

**Supply spacer
Exhaust spacer available**

D-sub connector, flat cable available

MW4GB2-T8*D

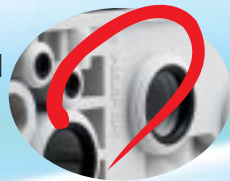
G Ecological **Grade up**

Upgraded environmental friendly concept

- Protective **IP65** structure
(Dust/jet-proof type)
Compatible with a various of working environments

Upgraded endurance

- Environmentally friendly halogen free lead wire is used for internal wiring
- Material name indicated
Material name is stamped on main items for recycling.



MW4GB2-T8*Y*
Serial transmission + I/O block

W4GB2

MW4GA2-T10
Common gland

MW4GB2-T20
Multi-connector

and "human" protection

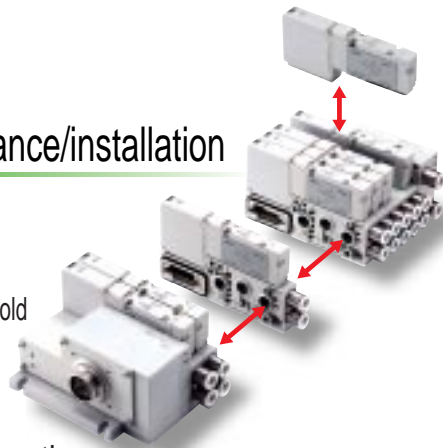
INDEX

W4G2 Series

G Easy operation **Grade up**

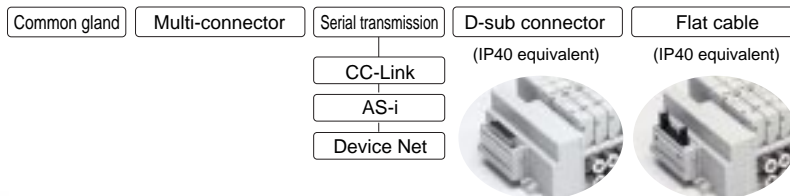
Upgraded ease of maintenance/installation

- Easy to change valves
Plug-in method is used.
- Reduced wiring when expanding manifold
Connector joint is used between manifold blocks.
(Excluding AC specifications)
- Compatible with DIN rail mounting
Change of specification from direct mount is possible



Upgraded flexibility

- Supply spacers/exhaust spacers**
Low profile mix manifolds and individual exhaust specifications available.
- Selective piping directions**
Upward, sideways and rear* piping available.
(* excluding DIN rail mount)
- Multi-pressure use
- Ample variety of electric connection



- Network controlled peripheral devices**
Network control of valve and sensors around manifold is achieved by expanding input/output block.
(Serial transmission)

G Reliability **Grade up**

- Response time **24** sec. or less
(CKD data values: 2 position single)
- Service life **60** million cycles and over
(at 0.5 MPa with clean air)

G Safety **Grade up**

- 3 types of manual override



(1) Non-locking locking common type (standard)



(2) With OFF function
The manifold can be turned off independently even when the valve power is ON, allowing the equipment to be started up and serviced easily. Normal manual override also available. (Push/non-locking type)



(3) Non-locking type

- Protective structure IP64 is applied only when installed with facing connector upward.
- Built-in check valve prevents Cylinder misoperation caused by lead in of back pressure.
- Filter equipped on supply port (discrete type optional)



W4G2 Series variation Intro 1

⚠ Safety precautions Intro 4

Specifications/model no./dimensions, etc.

Discrete

Sub-base porting **W4GB2 Series** 1

Reduced wiring manifold

Body porting **MW 3 GA2-T1-2-3-5-8 Series** 5

Sub-base side porting **MW4GB2-T1-2-3-5-8 Series** 23

Sub-base rear porting **MW4GZ2-T1-2-3-5-8 Series** 23

Block configurations

Configuration 51

Block model no. 53

Related products 59

Tag/plate/tie rod/silencer/blanking plug, etc.

Block manifold internal structure

NW3GA2 Series 67

NW4GA2 Series 68

NW4GB2 Series 69

NW4GZ2 Series 69

Technical data

(1) Pneumatics system selection guide 71

(2) Notes when wiring 75

(3) Check valve 91

(4) How to expand reduced wiring manifold 92

Manifold specifications

How to fill out manifold specifications 95

How to fill out wiring specifications form 96

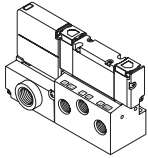

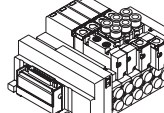
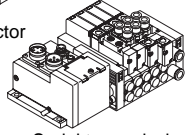
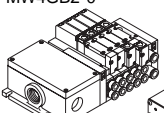
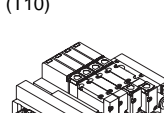
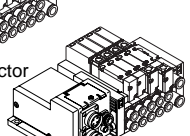
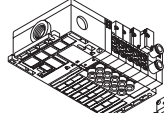

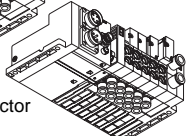
Manifold specifications 97

Wiring specifications 100



Always read precautions on Intro 4 to use this product properly and safely.

MW₄GAMW GA/4GB/4GZ Series Variation

Series variation/appearance		Model no.	Valve performance		Page	Protective structure	Solenoid position						Standard										
			Flow characteristics (dm ³ /s-bar) Note 1	Applicable cylinder bore size φ			2-position		3-position		Mix	Locking/non-locking common manual override	Protective cover of manual override	Check valve H	P port filter	Surge suppressor and light							
							Normally closed	Normally open	Single	Double							All ports closed	A/B/R connection	P/A/B connection				
Discrete	Sub-base porting W4GB2*0 	W4GB2	2.1 to 2.5	φ20 to φ80	1	IP 65			●	●	●	●	●		●								
Body porting	MW ₃ GA2*0  Common gland (T10) Multi-connector (T20)  D-sub connector (T30) Serial transmission (T8*) 	MW3GA2 MW4GA2 (NW3GA2) (NW4GA2)	1.7 to 2.3	φ20 to φ80	5	IP 65	●	●	●	●	●	●	●	●	●	●	●						
							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
							●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Reduced wiring manifold	Sub-base side porting MW4GB2*0  Common gland (T10) Multi-connector (T20)  D-sub connector (T30) Serial transmission (T8*) 	MW4GB2 (NW4GB2)	1.7 to 2.3	φ20 to φ80	23	IP 65			●	●	●	●	●	●	●	●	●						
									●	●	●	●	●	●	●	●	●	●	●	●	●		
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Sub-base rear poring	MW4GZ2*0  Common gland (T10) Multi-connector (T20)  D-sub connector (T30) Serial transmission (T8*) 	MW4GZ2 (NW4GZ2)	1.7 to 2.3	φ20 to φ80	23	IP 65			●	●	●	●	●	●	●	●	●						
									●	●	●	●	●	●	●	●	●	●	●	●	●		
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	
									●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Note 1 : Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

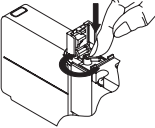
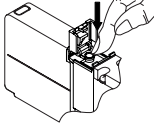
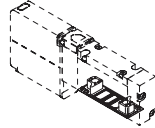
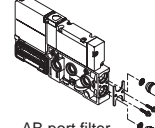
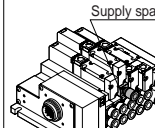
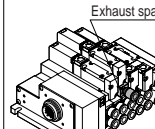
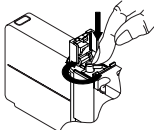
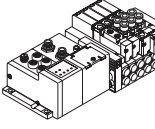
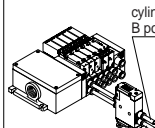
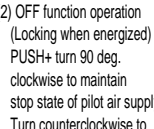
Note 2 : Optional

Note 3 : Integrated in P port.

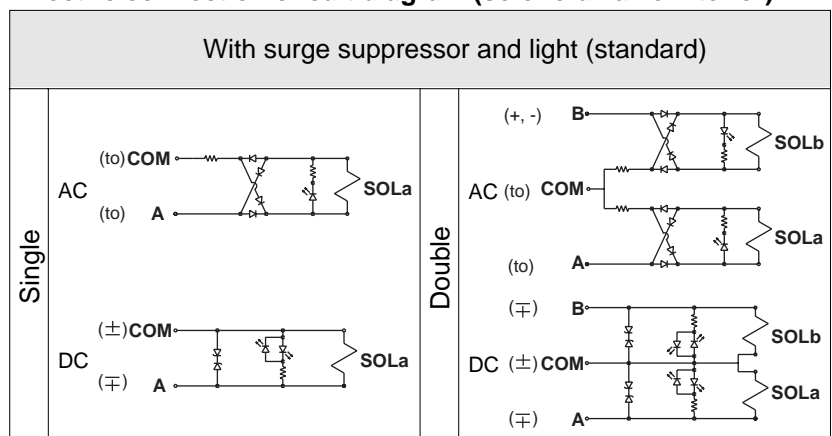
Note 4 : Option M and M7 can not be selected together.

Note 5 : Tag plate can not be attached if there is a spacer placed in the manifold.

	Option						Mount type	Related products				A/B port					P/R port			Electric connection						Voltage							
	Non-locking type Manual override Note 4	OFF function Manual override Note 4	External pilot	Ozone/ coolant proof A/B port	Filter integrated	I/O block		Direct mount	DIN rail mount	Supply spacer	Exhaust spacer	Tag plate Note 5	Push-in fitting			Push-in fitting L type (upward)		Female thread		Push-in fitting		Female thread	Terminal box	I/O connector	Common gland	Multi-connector	D-sub connector	Flat cable Connector	Serial transmission	AC 100 V	DC 24 V	DC 12 V	
													φ 4	φ 6	φ 8	φ 6	φ 8	Rc 1/8	Rc 1/4	φ 8	φ 10												Rc 1/4
	M	M7	K	A	F	Y**						C4	C6	C8	CL6	CL8	6	8	C8	C10	8		R1	T10	T20	T30	T5	T8		1	3	4	
	●	●		●	●												●					●	●							●	●	●	
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●			●							●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●			●							●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●			●							●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●			●							●	●	●
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●			●							●	●	●

Electric connection		Manual override	Other options			
Discrete	Reduced wiring manifold		M	H	F	Z1
Blank Terminal box	T10 Common gland	<p>● Non-locking locking common type (provided as standard)</p> 	M Non-locking type Manual override	H With check valve	F Integrated AB port filter	Z1 Supply spacer
R1 I/O connector	T20 Multi-connector		<p>(1) PUSH to turn ON OFF when released</p> 	 <p>Provided as standard for pilot exhaust.</p>	 <p>AB port filter</p>	 <p>Supply spacer</p>
● Lead wire length 500mm	T30 D-sub connector	<p>(1) As non-locking ON when pushed OFF when released</p> <p>(2) As locking PUSH + turn 90 deg. clockwise to maintain ON state. Turn counterclockwise to release lock.</p>	K External pilot	D DIN rail mount	Z3 Exhaust spacer	 <p>Exhaust spacer</p>
	T5 Flat cable Connector		M7 With OFF function Manual override	A Ozone/coolant proof	Y** I/O block	
	T8 Serial transmission		<p>(1) Normal manual operation Non-locking type ON when pushed OFF when released</p> 	<p>Select to gain resistance to ozone and coolant.</p>		 <p>cylinder B port cylinder A port</p>
			<p>(2) OFF function operation (Locking when energized) PUSH+ turn 90 deg. clockwise to maintain stop state of pilot air supply. Turn counterclockwise to unlock and supply pilot air.</p> 		<p>1 Refer to "4G Series pilot check valve" (Catalog No.CC-744) for details.</p>	

Electric connection circuit diagram (solenoid valve interior)



Zener diode is used for the surge suppressor.



Pneumatic components

Safety precautions

Always read this section before starting use.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the device is secured.

It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD products are used safely.




Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

WARNING

- 1** Contact CKD when using the product outside the unique specifications range, when using it outdoors, and when using it under the conditions and environment below.
 - ① Use for special applications including nuclear energy, railway, aircraft, marine vessel, vehicle, medical devices, devices or applications coming into contact with beverage or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
 - ② Use for applications where life or assets could be adversely affected, and special safety measures are required.
- 2** Observe warnings and cautions on the pages below to prevent accidents. Do not modify or machine this product.
- 3** This product is intended for use as a general-purpose industrial device or part. It must be handled by an operator having sufficient knowledge and experience in handling.
- 4** Observe association standards and regulations, etc., to ensure safe device design. ISO 4414, JIS B 8370 (pneumatic system principles), JIS B 8368(pneumatic cylinders) JPAS 0005(principles for pneumatic cylinder use and selection), High Pressure Gas Maintenance Laws, Occupational Safety and Sanitation Laws, and other safety regulations and corporate standards.
- 5** Do not handle, pipe or remove devices before confirming safety.
 - ① Inspection and preparation of machine/equipment must be done after confirming position locking measures of object driven and prevention of uncontrolled motion, etc.
 - ② When unmounting a component, check if the safety measures above are taken, turn off power sources such as air and power supplies of the equipment, and exhaust compressed air in the system, then perform the work.
- 6** When restarting machine/equipment, check if popping out prevention measures be taken, then perform the work.
- 7** The catalog/instruction manual must be read carefully to sufficiently understand the contents before using the product. The catalog/instruction manual must be kept at where an operator can read them anytime.

■ The precautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

-  **DANGER** : When a dangerous situation may occur, if handling is mistaken, leading to fatal or serious injuries, or when there is high degree of emergency to a warning.
-  **WARNING**: When a dangerous situation may occur, if handling is mistaken, leading to fatal or serious injuries.
-  **CAUTION** : When a dangerous situation may occur, if handling is mistaken, leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation. In any case, important information that must be observed is explained.



Safety precautions

Pneumatic components: warnings, cautions

Always read this section before starting use.

WARNING

Design & Selection

Circuit design

1 Properties of compressed air must be understood before designing a pneumatic circuit.

- The same functions as mechanical, hydraulic, and electrical methods cannot be expected if instantaneous service interruption and holding are required during an emergency stop.
- Pop-out, air discharge, or leakage due to air compression and expansion could occur. Air must be supplied to and exhausted from the valve simultaneously.
- If air is supplied first, the actuator switch over may be delayed. If air is exhausted first, it is not possible to control actuator speed and the pop-out may occur.

2 Confirm that the product can withstand the working environment.

- This product cannot be used in an environment containing corrosive gas, chemical liquids, solvents, water, vapor, or ozone. If water drip, oil or metal chips (spatter or cutting chips, etc.) could come in contact with the product, provide appropriate protection
- Consult with CKD if ozone is generated in the air supply. (An ozone resistant series is available.)
- These products can not be used in the environment containing flammable gas except explosion proof valves.

3 Make sure that switch signals for the 2-position and 3-position double solenoid do not turn ON simultaneously.

4 3 position valve must not be used for braking and pressure holding.

- Air leakage may result in change in stop position and pressure drop.

5 Contact CKD if the stop position must be held for a long time.

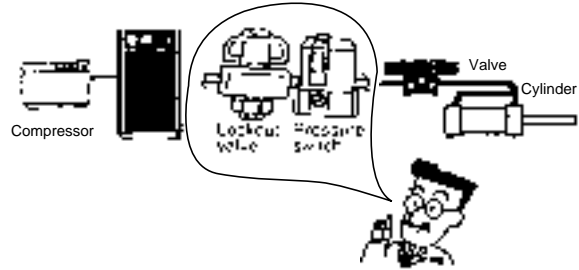
6 When a valve is energized continuously for a long term except for long term continuous energizing type, or when energizing time is longer than de-energizing time, consult with CKD.

7 Take care of electrical circuits during emergency stops and cylinder operation during a service interruption.

- If the 2-position double solenoid is operated once and changed, thatContact CKD when the stop position must be held for a long time.

8 Install "pressure switch" and "shut-off valve" on compressed air inlet of equipment.

- If the pressure does not reach the set pressure of the pressure switch, operation must be disabled. Shut-off valve exhausts compressed air remaining in a pneumatic circuit to prevent an accident caused by an action of pneumatic components by residual pressure.



CAUTION

Design & Selection

1 Decide the method of lubricating pneumatic components, and provide correct maintenance.

- 4G series is pre-lubricated. If lubrication is required, use additive-free turbine oil (ISO-VG32). Do not use spindle oil, nor machine oil since malfunction may occur due to the expansion of rubber parts.

When lubricating, do not stop lubrication since pre-lubricated lubricant may flow out. Insufficient lubrication will very significantly reduce operation performance to cause malfunction. Excessive lubrication or insufficient pressure may delay the response time. The response time on the catalog is the time when pre-lubricated, 0.5MPa and ON.

2 Indicate the maintenance conditions in the device's instruction manual.

- Performance of the product will be very significantly reduced depending on operating conditions, working environment and maintenance, and in some cases, the safety may not be secured. Proper maintenance is necessary to maintain the product in the proper conditions.

3 Check leakage current to prevent other fluid control components from malfunctioning due to leakage current from others.

- When using a programmable controller, etc., the valve could malfunction because of leakage currents from the device.

The value affected by leakage current differs with the solenoid valve.



When AC100V	2.0mA or less
When DC12V	1.5mA or less
When DC24V	1.8mA or less

4 Avoid restricting the air supply port and atmospheric release.



Air supply port must not be restricted

- When using the internal pilot operated type, supply pressure could drop below the working range and malfunction. Use the external pilot operated type in this case.

5 Keep the momentary power on and manual operation time of the double-solenoid type 2-position valve at 0.1 seconds or longer.

It is recommended that it is energized/manually operated until it reaches the stroke end, since the cylinder may malfunction depending on the secondary load.

CAUTION**Design & Selection****6 Working Environment**

Consult CKD for specifications when using product for special applications or use outside the specifications.

- Supplied air
 - When cutting lubricant contacts a cylinder rod. (Cutting lubricant will enter the pipe to the valve through the cylinder, leading to malfunctions)
 - When a special oil is used for the compressor.
 - When ozone is forming in the supplied air.
- Ambient temperature
 - When this product in an environment hotter than 55°C or colder than -5°C.
- Working environment
 - When cutting lubricant etc., contacts a valve directly. (This may result in leakage of electricity, coil burning, cracking of resin, and malfunction, etc. Protect the product by installing a cover or a panel, etc.)
- Vibration / impact
 - Avoid use where vibration exceeds 50m/s², or where impact exceeds 300m/s².
- Low pressure use
 - When using the product below the minimum working pressure, external pilot type must be used. Also, the use with low vacuum or pressurizing other than 1(P) must be avoided.

7 Use clean air.

- The product could break or malfunction if used with compressed air containing chemicals, synthetic oils containing organic solvents, salt, or corrosive gases, etc.

8 Lubrication

- The product is usually used without lubrication, however, if lubrication is required, the lubrication must not be interrupted during operation and continue to lubricate. Excessive lubrication or insufficient pressure may delay the response time. The response time may also vary depending on the change in ambient temperature.

WARNING**Installation & Adjustment****Installation**

- 1** Do not support valves with piping when installing valves.
 - Install and fix the valve body.
- 2** Avoid washing with water or solvents or painting after installation.
 - Resin parts could be damaged.
 - The paint could block the pilot exhaust port and cause malfunction.
- 3** If a valve is installed in a control panel, or if energizing time is long, take measures to radiate heat to maintain the ambient temperature of the valve within the specified range.
- 4** Applied voltage
 - Apply the specified voltage to the valve properly. Applying wrong voltage will lead to malfunction, damage or burning of the product.



Safety precautions

Pneumatic components: warning, cautions

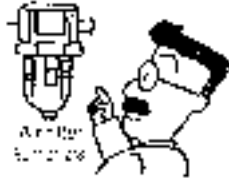
Always read this section before starting use.

CAUTION

Installation & Adjustment

Installation

- 1 Secure sufficient space around the valve for installation, removal, wiring, and piping work.
- 2 Install the air filter just before the circuit using the pneumatic component.



3 Check of wiring

- Check that connections are correct after wiring is completed.

Piping

- 1 When connecting pipes, wrap sealing tape in the opposite direction from threads starting 2 mm margin from the end of piping threads.
- If sealing tape protrudes from pipe threads, it could be cut when screwed in. This could cause the tape to enter the solenoid valve and lead to faults.



2 Do not remove any valve packaging until immediately before piping.

- If the package is removed before connecting pipes, foreign matter could enter the valve from the piping port and result in fault or malfunction.

3 Always flush just before connecting to pneumatic components.

- Any foreign materials must not enter the pneumatic components during piping.



4 When connecting port, tighten with adequate torque.

- Failure to observe this will lead to air leak and/or screw damage.

To avoid scratches on the screw thread, tighten it with a hand at first, then use a tool.



[Reference values]

Port thread	Tightening torque N·m
M3	0.3 to 0.6
M5	1 to 1.5
Rc 1/8	3 to 5
Rc 1/4	6 to 8
Rc 3/8	13 to 15

5 Connect piping so that connections are not dislocated by system movement, vibration, or tension.

- Control of actuator speed will be disabled if piping on the exhaust side of the pneumatic circuit is dislocated.

- When using a chuck holding mechanism, the chuck will be released creating a hazardous state.

6 Do not restrict the exhaust port to a size smaller than the piping connection port.

A respiration effect could be generated by the operation of the valve at the valve's exhaust port, and cause foreign matter around the exhaust port to be sucked in, or could cause foreign matter to enter if the exhaust port is facing upward.

Install a silencer or pipe the exhaust port so it faces downward.

- The actuator will not operate correctly if exhaust is not smooth. When using a manifold, exhaust could prevent the other EVT units from functioning correctly.

7 When supplying compressed air for the first time after connecting pipes, do not apply high pressure suddenly.

- Piping connection could be dislocated and piping could bounce, causing an accident.

- Caution: If compressed air is supplied too slowly, sealing pressure may not be generated by the sealing agent in the valve, leading to air leaks.

8 When supplying compressed air for the first time after connecting piping, confirm that air is not leaking from any connecting port sections.

- Apply a leakage detection agent on pipe connections with a brush, and check for air leaks.

CAUTION

Installation & Adjustment

9 Follow the precautions below when using nylon tubes or urethane tubes.

- Use flame resistant tubing or metal piping if it could be subject to spatter.
- Use hydraulic hose for piping for both hydraulic and pneumatic specifications. When using the standard push-in joint on the spiral tube, fix the base of the tube with a hose band. The tube will rotate and holding force will drop if not fixed. When using in a hot environment, use a soldered screw tightened joint. The push-in fitting cannot be used.

10 Piping

- Applicable tube
Use out specified tube for a valve with push-in joint.
Soft nylon (F-1500 Series)
Urethane (U-9500 Series)
When using a commercially available tube, check external dimension accuracy, thickness, and hardness. Use a urethane tube with a hardness of 93° and over (rubber hardness meter). If a tube that does not satisfy the diameter accuracy or hardness is used, the chucking force may drop, the tube may dislocate, or may be difficult to insert.

Tube dimensions

Outer diameter mm	Inner diameter mm	
	Nylon	Urethane
φ 4	φ 2.5	φ 2
φ 6	φ 4	φ 4
φ 6.4	φ 4.6	φ 4.2
φ 8	φ 5.7	φ 5
φ 10	φ 7.2	φ 6.5
φ 12	φ 8.9	φ 8

Tolerance of outer diameter

Soft/hard nylon	± 0.1mm
Urethane φ 4, φ 6, φ 6.4	+0.1mm
	-0.15mm
φ 8, 10, 12	+0.1mm
	-0.2mm

- Tube bending radius
The tube's bending radius must be larger than the minimum bending radius. (or may result in leakage)

Bore size	Minimum bending radius mm	
	Nylon	Urethane
φ 4	10	10
φ 6	20	20
φ 8	30	30
φ 10	40	40
φ 12	55	50

- Cutting tube
Use a tube cutter (AZ1200), and cut at a right angle to the axis. Air could leak if a tube cut at a slant is inserted.

- Tube connection
Providing strait section as long as the applicable tube outside diameter from the end of a joint, shape bending pipe must be avoided near to the port of joint to be inserted. Tube tension to the side must not exceed 40N.

- Applicable blanking plug
Use our specified blanking plug for a valve with push in joint. Blanking plug GWP*-B Series

11 Port indication

Port positions such as 1P and 4A, etc., are indicated in accordance with ISO and JIS standards.

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

- Any valve mounting direction is permissible. Check port symbol to pipe without producing reverse action of cylinder, etc., since in the 4G series, port position of 4(A), 2(B)/5(R1) and 3(R2) are located in the opposite side of 4K series.



Safety precautions

Pneumatic components: warning, cautions

Always read this section before starting use.

WARNING

During Use & Maintenance

Air quality

- 1 Do not supply fluid other than compressed air.
- 2 Use clean compressed air that does not contain corrosive gases.

During Use & Maintenance

- 1 Before servicing the product, turn power OFF, stop the compressed air supply, and check that there is no residual pressure. Before setting the load, check that the locking mechanism functions correctly.
 - This is a requirement for ensuring safety.



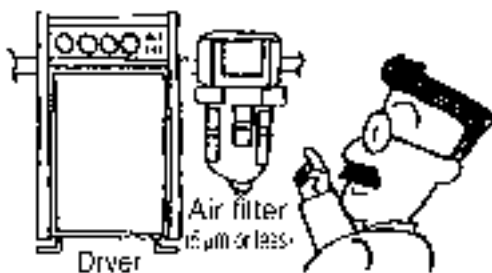
- 2 If its used infrequently (not used longer than 30 days), do a test-run of the valve every 30 days to prevent malfunction, i.e. the product must be checked if it is in normal condition.
- 3 Read the instruction manual enclosed with the product before disassembling or assembling the solenoid valve.
 - Understand the structure and operational principle of the solenoid valve to secure safety.

CAUTION

During Use & Maintenance

Air quality

- 1 Use dry compressed air that does not cause condensation in piping.



- Drain will generate if the temperature drops in the pneumatic circuit.
- Drain will enter the air path in pneumatic components to block the flow path instantaneously, causing malfunction.
- Drainage could cause rust, causing the pneumatic to device fail.
- Drain will wash lubricant away and cause defects.

- 2 Use compressed air that does not contain oxidized oil, tar, carbon, etc., from the air compressor.
 - If oxidized oil, tar, or carbon enter the components and sticks on tool, resistance at the sliding section will increase, and could lead to operation faults.
 - If the supplied lubricant mixes in with oxidized oil, tar, carbon, etc., the sliding section of the air compressor could be worn.
 - Place a submicron air filter if there is a large volume of tar or carbon in the air.
- 3 Use compressed air that does not contain solid foreign matter.
 - Solid foreign matter in compressed air could enter the air compressor and cause wear at the sliding section or could cause sticking.
- 4 If a pre-lubricated valve is once lubricated, oil-free property can not be maintained. Operation must be started after checking the state of grease.
 - Decide whether the pneumatic component is used oilless or lubricated, and make sure that the decided method is accurate and controlled.
 - When lubricating, use ISO VG32 (additive-free) turbine oil.

⚠ CAUTION

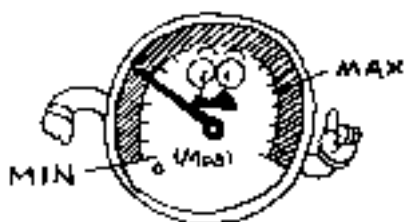
During Use & Maintenance

During Use & Maintenance

1. Conduct daily and periodic inspections and manage your maintenance schedule.
 - Insufficient maintenance control will very significantly reduce performance of the product to result in accidents and problems such as short service life and malfunction caused by damage.

1. Control of supplied compressed air pressure

- Is the set pressure supplied? Does the pressure gauge indicate the set pressure during operation?



2. Control of pneumatics filter

- Is the oil rate correctly adjusted?
Is the end absorber required even when using the SKH shock absorbing valve?

3. Control of compressed air leaks from piping connections
 - Is the state of the connection, especially at movable sections, normal?

4. Valve operational status control

- Are any operations delayed? Is exhaust normal?

5. Control of pneumatic actuator operation

- Is the operation smooth? Is end stop normal? Is coupling with the load normal?

6. Control of lubricator

- Is the product pre-lubricated ?

7. Control of lubricant

- Is the set pressure supplied?

Valve replacement

When replacing a valve, install the valve without dislocating pilot check valve and gaskets.

	Screw Size	Proper tightening torque (N·m)
4G2	M2.5	0.25 to 0.30



Safety precautions

Pneumatic components: warning, cautions

Always read this section before starting use.

Specific precautions

CAUTION

1 Port indication

Port positions such as 1P and 4A, etc., are indicated in accordance with ISO and JIS standards.

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

Installation & Adjustment

- Any valve mounting attitude is permissible. The 4 (A) and 2(B), and the 5 (R1) and 3 (R2) port positions of the 4G Series are the reverse of the 4K Series. Confirm the port symbol and pipe so that the cylinder, etc., operation is not reversed.

CAUTION

During Use & Maintenance

○ Valve replacement

Check that the gasket and pilot check valve do not fall off when replacing and installing the valve.

	Screw Size	Proper tightening torque (N-m)
4G2	M2.5	0.25~0.30

WARNING

Manual override

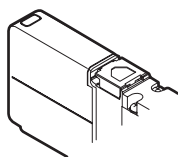
Introduction

- This valve is an internal pilot operated valve. If air is not supplied to the P port, the main valve will not change even if the manual override is operated.
- A protective cover for manual override is provided as standard. The manual override protective cover is closed when the valve is shipped to protect manual override, which cannot be seen when delivered. Open the protective cover and operate manual override. Note that the protective cover does not close unless the manual override lock is released.
- A non-locking/locking common manual override is equipped as standard. The lock is applied by pressing down and turning manual override. Press down first and turn to lock. If manual override is turned without being pressed down, it could be damaged or air could leak.

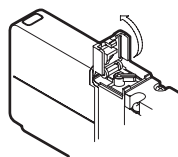
Opening and closing the manual protective cover

Do not excessively force the manual protective cover when opening and closing it. Excessive force could cause faults. (Less than 5N)

W4G2 series



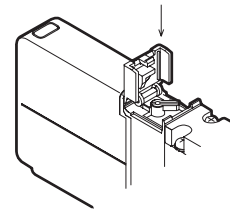
Turn



How to operate manual override

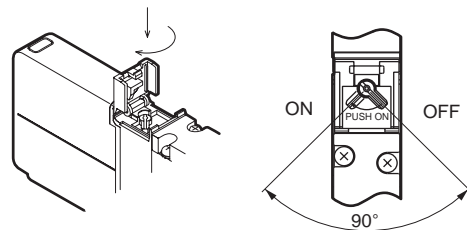
1 Push/non-locking operation

Push in the direction of the arrow until it stops. Manual override is unlocked when released.



2 Operating push locking type

Push manual override and turn 90° in the direction of the arrow. Manual override is not unlocked even when released.



WARNING

When conducting manual operations, make sure that there are no people near the moving cylinder.

⚠ CAUTION

Manual override

Manual override with OFF function

The supply of pilot air is forcibly stopped when power is on, so the main valve can be switched even when power is on. When using the off function, caution is required because the cylinder moves immediately when using the 2-position single and 3-position ABR connection or PAB connection.

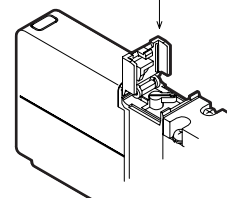
Output port destination list

Solenoid position			OFF function (energized side manual)		De-energized side manual
			No operation	Operation	Operation
2-position	Single	a side sol energizing	4 (A)	→ 2 (B)	-
	Double	a side sol energizing	4 (A)	4 (A) → 2 (B)	
b side sol energizing		2 (B)	2 (B) → 4 (A)		
3-position	All ports closed	a side sol energizing	4 (A)	4 (A) → 2 (B)	
		b side sol energizing	2 (B)	2 (B) → 4 (A)	
	A/B/R connection	a side sol energizing	4 (A)	- → 2 (B)	
		b side sol energizing	2 (B)	- → 4 (A)	
	P/A/B connection	a side sol energizing	4 (A)	4 (A)/2 (B) → 2 (B)	
		b side sol energizing	2 (B)	4 (A)/2 (B) → 4 (A)	

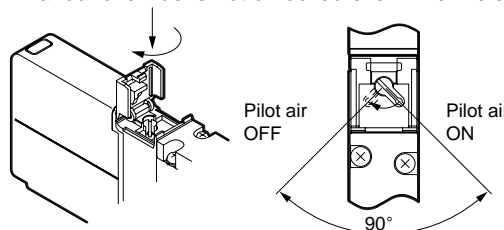
*: De-energized side manual, push/non-locking operation

How to operate manual override with OFF function

- During normal use (push/non-locking operation)
Push in the direction of the arrow until it stops. Manual override is unlocked when released.



- When using OFF function (push/lock operation when energized)
Push manual override and turn 90° in the direction of the arrow. Manual override is not unlocked even when released.



WARNING

When operating the manual override, make sure that there are no people near the moving cylinder.

⚠ CAUTION

Working Environment

IP65 (IEC60529 (IEC529: 1989-11)) standards are applied to the test. Avoid use in conditions which water or coolant could directly contact the valve.

Explanation of protection property symbols and examination method of IP65

● Protective structure

Note: IP-65 is a test based on the following standard

■ IEC (International Electrotechnical Commission) Standards

(IEC60529|IEC529:1989-11)

IP — □ □

Protective cover provided

1st characteristic number (protective class against external solids)

Grade	Degree of protection	
6	Dust proof type	Dust does not enter inside.

2nd characteristic number (protective class against entry of water)

Grade	Degree of protection	Overview of test method (fresh water is used.)
5	Protection for jet water Not affected by jet water from nozzle from any direction	Using the following test equipment, (outline) will be sprayed per surface area 1 m ² from all directions for 1 minute, total of 3 minutes or longer Spray nozzle inner diameter: φ 6.3mm



Safety precautions

Pneumatic components: warning, cautions

Always read this section before starting use.

Specific precautions

CAUTION

For the external pilot (K) type, pilot air supply ports are individually provided. Care must be taken when connecting port position since air supply of pilot air has 6 dia. push-in fitting. Incorrect piping causes operation faults.

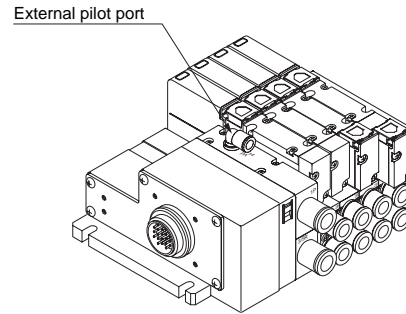
Port indication

Applications		Display (ISO standards)
Pilot air	Supply port	40526

*A/ B and R port can not be pressurized.

External pilot (K) piping port

MW4G2



External pilot air supply port is the 6 dia. push-in fitting on the top of the supply and exhaust block

CAUTION

How to install manifold

Installing with a DIN rail

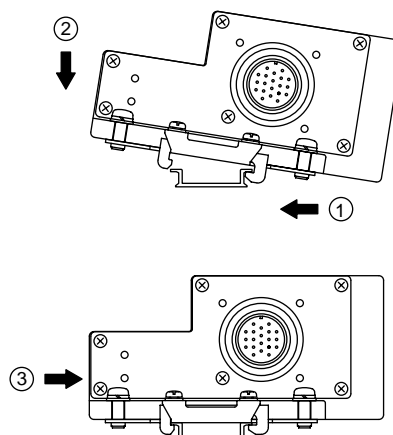
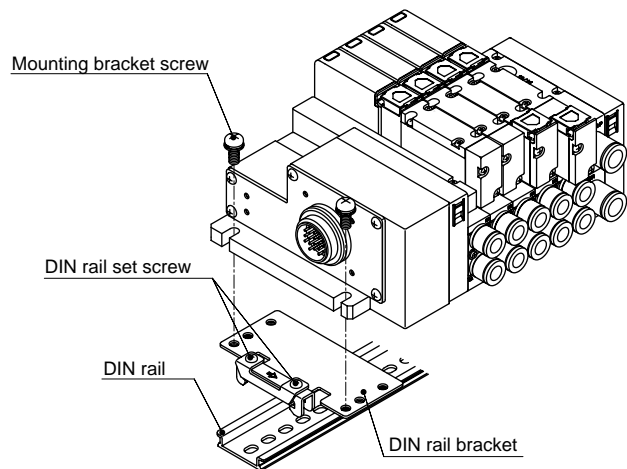
With the W4G2 Series, the direct mounting manifold can be changed to DIN rail mounting.

The manifold could drop off or be damaged if not mounted correctly.

Also, if the total manifold weight exceeds 1kg, or if installed in an environment where there are vibration/impulse, fix the DIN rail on 50 to 100 mm interval on the fixing face and confirm that it is mounted correctly. The mounting direction and mounting direction are not restricted, but the manifold could drop off if the set screws loosen because of vibration, so check the state carefully before starting operation.

*Refer to block configurations on P.57 for DIN rail bracket kit and DIN rails.

How to install DIN rail



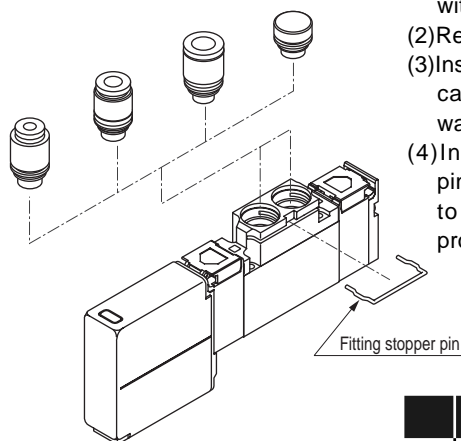
1. DIN rail bracket is installed.
(Tightening torque: 1.8 to 2.3N·m)
2. Catch the jaws into the DIN rail in the order of (1), (2).
3. Press down in the direction of (3).
4. Tighten the DIN rail set screws.
(Tightening torque: 1.2 to 1.6N·m)

⚠ CAUTION

How to replace cartridge fitting

Check procedures before changing the push-in fitting size. Problems such as air leakage could occur if the fitting is not installed properly or if mounting threads are not tightened sufficiently.

Body porting (A) type

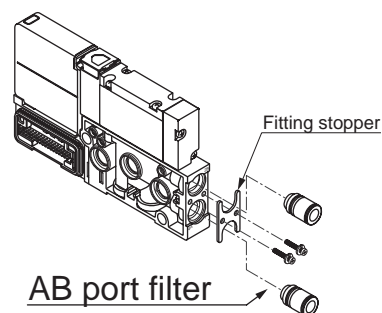


- (1) Remove stopper pin with a screwdriver.
- (2) Remove fitting
- (3) Insert the fitting vertically until it hits the wall.
- (4) Insert the stopper pin. Pull on the fitting to confirm that it is properly installed.

Size	Tightening torque (N·m)
4G2 M2.5	0.25~0.30

Base side porting (B) type

Base rear porting (Z) type



- (1) Remove the set screws.
- (2) Remove stopper plate and fitting simultaneously.
- (3) Align the stopper plate with the groove on the replacement fitting, and assemble temporarily.
- (4) Assemble the stopper plate and fitting together, and tighten the set screw. Pull on the fitting to confirm that it is properly installed.

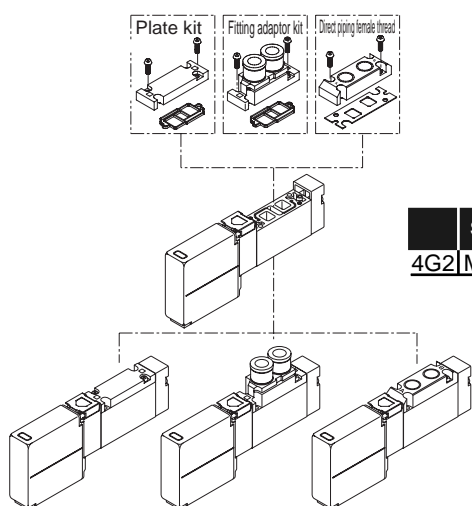
Cartridge type push-in fitting model no.

Models	Part name	Model no.
4G2	φ 4 straight	4G2-JOINT-C4
	φ 6 straight	4G2-JOINT-C6
	φ 8 straight	4G2-JOINT-C8
	φ 6L type (upward)	4G2-JOINT-CL6,CLL6
	φ 8L type (upward)	4G2-JOINT-CL8,CLL8
	Plug cartridge	4G2-JOINT-CPG

⚠ CAUTION

How to change connecting port specifications

When replacing the plate or joint adaptor installed on the body, or when changing from direct porting to base porting or vice versa, or when changing push-in fitting to female thread or vice versa, or if set screws are insufficiently fixed, air may leak.



Size	Tightening torque (N·m)
4G2 M2.5	0.25~0.30

Plate kit

Models	Kit model no.	Set parts
4G2	4G2-PLATE-KIT	Plate, gasket, two set screws

Fitting adaptor kit

Models	Part name	Kit model no.	Set parts	
4G2	φ 4 fitting Adaptor kit	For NC	4G2-JNT-ADAPTOR-KIT-C4NC	Fitting adaptor
		For NO	4G2-JNT-ADAPTOR-KIT-C4NO	Push-in fitting 2(NC,NO:1) (NC,NO: plug cartridge 1)
	φ 6 fitting Adaptor kit	For NC	4G2-JNT-ADAPTOR-KIT-C6NC	Gasket
		For NO	4G2-JNT-ADAPTOR-KIT-C6NO	Stop pin
	φ 8 fitting Adaptor kit	For NC	4G2-JNT-ADAPTOR-KIT-C8NC	Set screw 2
		For NO	4G2-JNT-ADAPTOR-KIT-C8NO	
		4G2-JNT-ADAPTOR-KIT-C8		

Female thread adaptor kit

Models	Kit model no.	Set parts
4G2	4G2-FML-ADAPTOR-KIT	Female thread adaptor, gasket, set screw 2



Safety precautions

Pneumatic components: warning, cautions

Always read this section before starting use.

Specific precautions

CAUTION

Surge suppressor

The surge suppressor enclosed with the solenoid valve is to protect the output contact for driving the solenoid valve. It is not designed to protect other devices and may be affected by the surge (failure, malfunction) Surge generated by other devices could be absorbed and cause damage such as burning. Care must be taken for points below.

(1) The surge suppressor limits solenoid valve surge voltage, which can reach several hundred volts, to a lower voltage level withstandable by the output contact. Depending on the output circuit used, this may be insufficient and could result in damage or malfunction. Check whether the surge suppressor can be used by the surge voltage limit of the solenoid valve in use, the output device's withstand pressure and circuit structure, and by the degree of return delay time. If necessary, provide other surge measures. Solenoid valves with surge suppressors suppress the reverse voltage surge generated during OFF operation to the levels below.

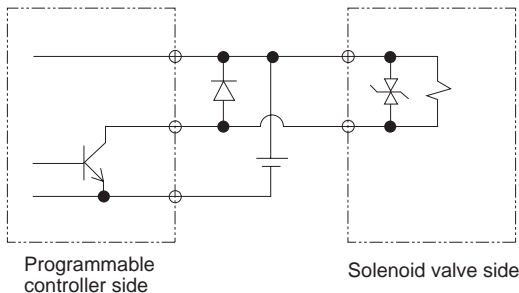
Rated voltage	Reverse voltage value when power turned OFF
DC12V	Approx. 27V
DC24V	Approx. 47V

(2) When using the NPN output unit, a surge voltage equivalent to the voltage above plus the power voltage surge could be applied. Provide contact protection circuit.

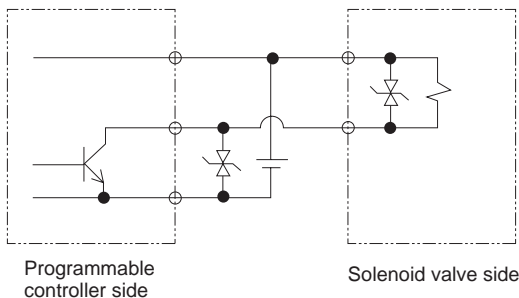
(3) If other components/valves are connected in parallel with the solenoid valve, the reverse polarity surge generated when the solenoid valve turns off will be applied to those components. Even when using the solenoid valve with a 24 VDC surge suppressor, the surge voltage could reach several tens of volts depending on the model. This reverse polarity voltage could damage devices connected in parallel or cause them to malfunction. Do not connect components that are weak against reverse polarity surge such as LEDs. When driving several solenoid valves in parallel, the surge from other solenoid valves could enter the surge suppressor of one solenoid valve with a surge suppressor. Depending on the current value, that surge suppressor could burn. When driving several solenoid valves with surge suppressors in parallel, surge current could concentrate at the surge suppressor with the lowest limit voltage and cause similar burning. Even if the solenoid valve type is the same, the surge suppressor's limit voltage can be inconsistent, and in the worst case, could result in burning. Avoid driving several solenoid valves in parallel.

(4) The surge suppressor integrated in the solenoid valve often short-circuits if damaged by excessive voltage or current the other solenoid valves. If the surge suppressor fails, if a large current flows when output is on, the output circuit or solenoid valve could be damaged or ignite. Do not keep power on in a faulty state. Provide an overcurrent protection circuit on the power or drive circuit or use a power supply with overcurrent protection so that a large current does not flow continuously.

(Example of output transistor protective circuit installation 1)



(Example of output transistor protective circuit installation 2)

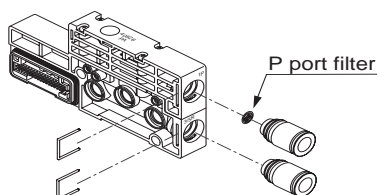


CAUTION**100 VAC specifications**

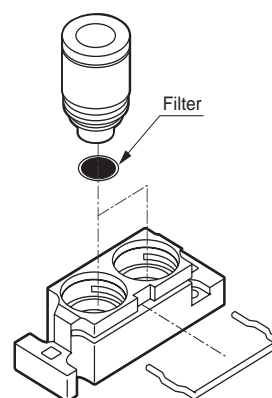
For 100 VAC, all wave rectified circuit is incorporated.
 When using SSR to turn the solenoid valve on and off, solenoid valve recovery could fail.
 Take care when selecting the SSR. (Consult with your relay/PLC manufacturer)

CAUTION**Port filter**

Port filter is used to prevent foreign materials from entering, and problems in a valve. It does not improve the quality of the compressed air. Read into 4 to 16 before mounting and adjusting it. Do not remove or force the port filter. The filter could deform and result in problems. If contaminants and foreign materials are found on the filter surface, blow lightly, or remove them by tweezers, etc.



Example of integrating P port filter (standard)



Example of integrating A.B port filter option

CAUTION**Serial transmission slave unit****Design**

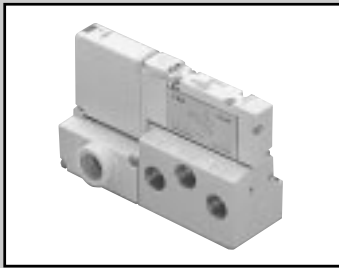
- The slave unit will go in to the following status when there is a communication abnormality.
 - (1) Input signal becomes all points OFF.
 - (2) The output signal becomes all points OFF. (However when a slave unit has an output mode setting switch, the setting condition is applied)

When wiring

- Always shut off the power before wiring/mounting. There is a risk of electric shock and damage to the product.
- Check the product's rated voltage and terminal layout, and wire correctly. Connecting a power with incorrect rating or connecting the wires incorrectly could lead to fires or faults.
- Tighten the water proof connector and the terminal screw withing the specified torque range. Loose connections could lead to fire or misoperation.
- Do not forcibly bend or pull the communication cables or power cables connected to the unit.
- Always use the specified communication cable. Separate the communication cable from the power cable and high-voltage cables.
- Do not use this product where it will be continuously submerged in water.

Start-up and maintenance

- Do not touch a terminals and connectors that are energized. There is a risk of electric shock.
- Shut down the power before cleaning and retightening.
- Do not disassemble or modify this product. There is a risk of failure and faulty operation.



Discrete Sub-base porting W4GB2 Series

● Applicable cylinder bore size: $\phi 20$ to $\phi 80$



Common specifications

Descriptions	W4GB2
Type of valve / operation method	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2
Withstanding pressure MPa	1.05
Ambient temperature °C	-10 to 55 (to be unfrozen)
Fluid temperature °C	5 to 55
Manual override	Locking/non-locking common type
Lubrication Note 1	Not required
Protective structure Note 2	Dust/jet-proof (IP65)
Vibration / impact m/s ²	50 or less / 300 or less
Working environment	Not subject to corrosive gas, etc.

Note 1 : Use turbine oil Class 1 ISO VG32 if lubricated.

Excess lubrication may result in unstable operation.

Note 2 : IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test.

Refer to Intro 12 for details.

Electrical specifications

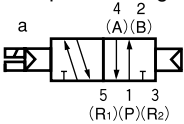
Descriptions	W4GB2	
Rated voltage V	DC	12 to 24
	AC	100
Rated voltage fluctuation range	±10%	
Holding current A	DC24V	0.025
	DC12V	0.05
	AC100V	0.012
Power consumption W	DC24V	0.6
	Note 3 DC12V	0.6
Apparent power VA	AC100V	1.2
Heat proof class	B	

Note 3 : Surge suppressor and indicator are provided as standard.

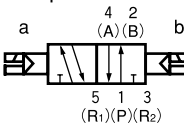
JIS symbol

● 5 port valve

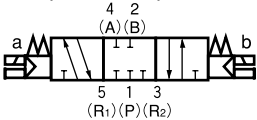
2-position single solenoid



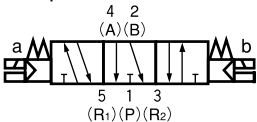
2-position double solenoid



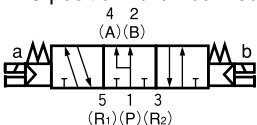
3-position all ports closed



3-position A/B/R connection



3-position P/A/B connection



Individual specifications

Descriptions	W4GB2	
Port size	A/B port	Rc1/4
	P/R port	Rc1/4

Descriptions			When turned ON	When turned OFF
Response time ms	2-position	Single	22	24
		Double	26	-
	3-position	A/B/R connection	25	35

Response time is measured at 0.5MPa, 20°C and oil free. Response time may vary depending on pressure and quality of oil.

Descriptions			Terminal box	I/O connector
Weight g	2-position	Single	351	409
		Double	367	424
	3-position	All ports closed	374	431

Flow characteristics

Model no.	Solenoid position	P → A/B		A/B → R		
		C [dm ³ / (s · bar)]	b	C [dm ³ / (s · bar)]	b	
W4GB2	2-position	2.5	0.27	2.5	0.2	
	3-position	All ports closed	2.3	0.32	2.1	0.21
		A/B/R connection	2.3	0.3	2.2	0.22
		P/A/B connection	2.4	0.02	2.3	0.19

Note: Effective sectional area S and sonic conductance C are converted as $S \cong 5.0 \times C$.

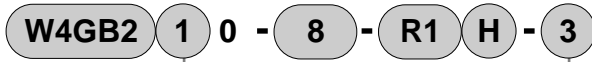
Ozone specifications

Coolant proof specifications

The specification can be selected with "D" option "A" in "How to Order" on pages 2.

How to order

● Discrete



● Discrete sub plate only



Sub plate

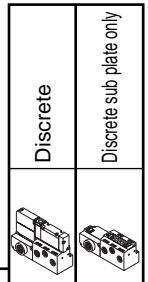
A Solenoid position

B Port size

C Electric connection
Refer to page 3 for the circuit diagram of the solenoid valve.

D Option

E Voltage



Symbol	Descriptions	Discrete	Discrete sub plate only
A Solenoid position			
1	2-position single solenoid	●	
2	2-position double solenoid	●	
3	3-position all ports closed	●	
4	3-position ABR connection	●	
5	3-position PAB connection	●	
B Port size			
8	Rc1/4	●	●
C Electric connection (light and surge suppressor provided as standard)			
Blank	Terminal box (cable clamp attached)	●	●
R1	I/O connector (500mm) (custom order)	●	●
D Option			
Blank	No options	●	●
M	Non-locking manual override Note 1	●	
M7	Manual override with off function Note 1	●	
H	Check valve Note 2	●	
A	Ozone/coolant proof	●	
F	P/A/B port filter integrated	●	●
E Voltage			
1	AC100V (rectified bridge integrated)	●	
3	DC24V	●	
4	DC12V	●	

⚠ Cautions for model No. selection

Note 1 : The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 2 : The check valve specifications are not available for the 3-position all ports closed or P/A/B connection. Refer to Page 91 for details on the check valve.

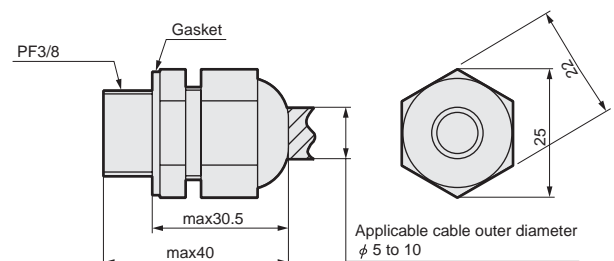
Electric connection

Name	Terminal box	I/O connector
Symbol	Blank	R1
Shape		
Terminal Layout		

Kit model no. for terminal box type

● Cable clamp (with gasket)

Model no.	Descriptions
W4G-BMS-038GP	Use to provide dustproof and jet-proof protection for the cable.

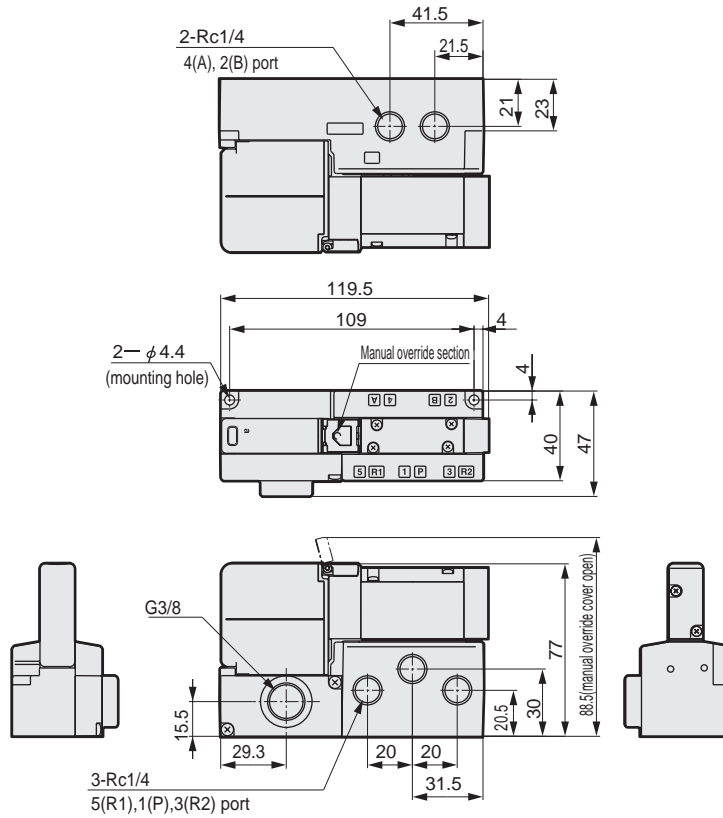
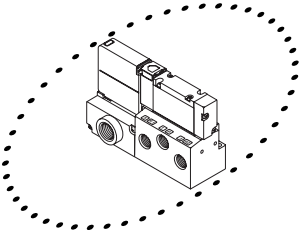


(reference value)
Body tightening torque 2.0 to 2.5 N·m
Cable clamp tightening torque 1.5~2.0N·m

Dimensions

W4GB210

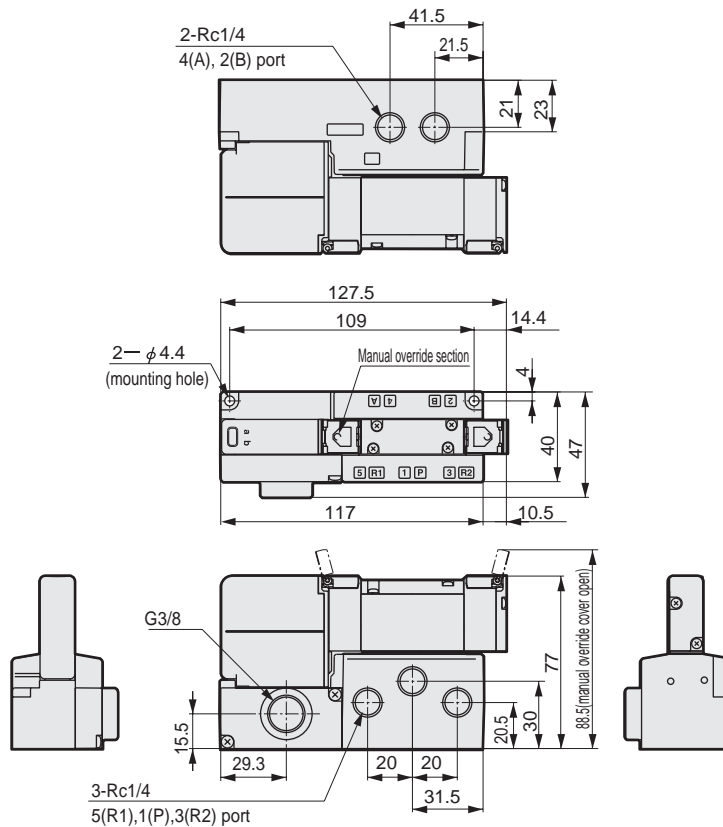
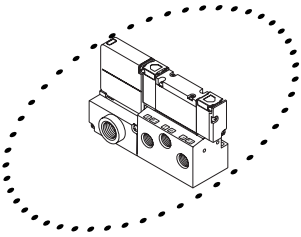
- Terminal box (blank)



Refer to page 4 for I/O connector (R1)

W4GB220

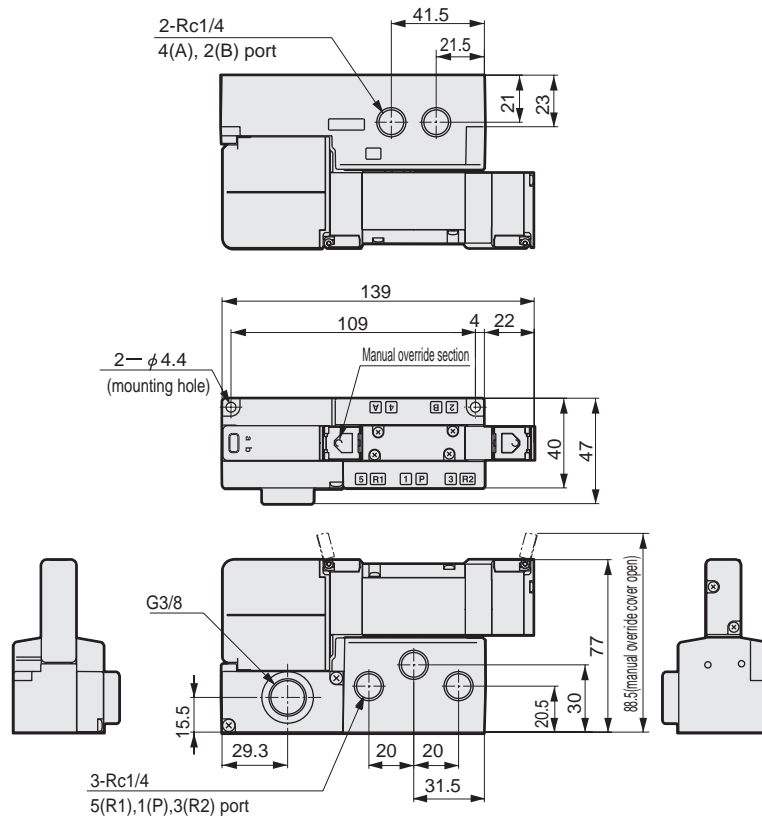
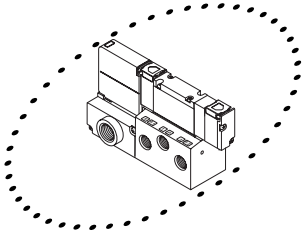
- Terminal box (blank)



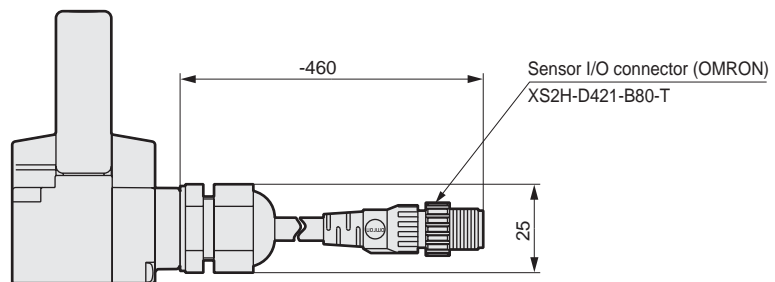
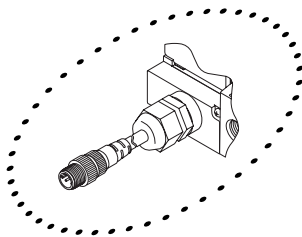
Dimensions

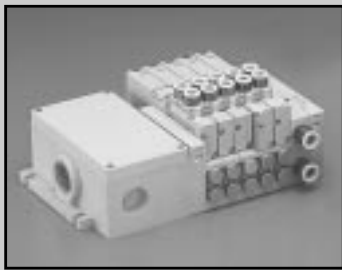
W4GB2³/₄0

- Terminal box (blank)



- I/O connector (R1)





Reduced wiring manifold

Body porting

MW₃GA2-T1/2/3/5/8 Series

● Applicable cylinder bore size: $\phi 20$ to $\phi 80$ **CE**

Manifold common specifications

Descriptions	MW3GA2-MW4GA2	
Manifold type	Block manifold	
Supply and exhaust method	Common supply/common exhaust (check valve integrated)	
Pilot exhaust method	Internal pilot	Main valve/pilot valve common exhaust (pilot exhaust check valve integrated)
	External pilot	Main valve and pilot valve individual exhaust
Piping direction	Valve top direction	
Type of valve / operation method	Pilot operated soft spool valve	
Working fluid	Compressed air	
Max. working pressure MPa	0.7	
Min. working pressure MPa	0.2	
Withstanding pressure MPa	1.05	
Ambient temperature °C	-10 to 55 (to be unfrozen)	
Fluid temperature °C	5 to 55	
Manual override	Locking/non-locking common type	
Lubrication Note 1	Not required	
Protective structure Note 2	Dust/jet-proof (IP65) Note 3	
Vibration / impact m/s ²	50 or less / 300 or less	
Working environment	Not subject to corrosive gas, etc.	

Note 1 : Use turbine oil Class 1 ISO VG32 if lubricated.

Excessive lubrication will lead to unstable operation.

Note 2 : IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test. Refer to Intro 12 for details.

Note 3 : The D-sub connector (T30) and flat cable connector (T5*) have a dustproof protective structure. Check that water drops or oil, etc., do not come into contact.

Electrical specifications

Descriptions	MW3GA2-MW4GA2	
Rated voltage V	DC	12,24
	AC	100
Rated voltage fluctuation range	±10%	
Holding current A	DC24V	0.025
	DC12V	0.05
	AC100V	0.012
Power consumption W	DC24V	0.6
	Note 4 DC12V	0.6
Apparent power VA	AC100V	1.2
		Note 5
Heat proof class	B	

Note 4 : Surge suppressor and indicator are provided as standard.

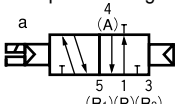
Note 5 : AC100V is not available for multi-connector/D-sub connector/flat cable connector. specifications do not have AC100V options.

100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

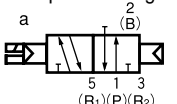
JIS symbol

● 3 port valve

2-position single solenoid NC type

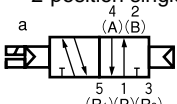


2-position single solenoid NO type

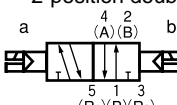


● 5 port valve

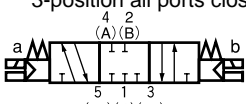
2-position single solenoid



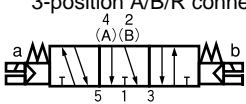
2-position double solenoid



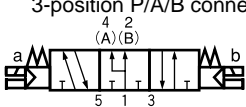
3-position all ports closed



3-position A/B/R connection



3-position P/A/B connection



Individual specifications

Descriptions	MW3GA2-MW4GA2										
	T10	T20	T30	T51	T53	T8G1 T8D1	T8G2 T8D2	T8G7 T8D7	T8MA	T8M6	
Maximum station number	Standard wiring	18	-	18	18	18	16	16	16	4	8
	double wiring	9	8	12	9	12	8	8	8	2	4
Maximum solenoid number	18	16	24	18	24	16	32	16	4	8	
Port size	A/B port	Push-in fitting $\phi 4$, $\phi 6$, $\phi 8$, Rc1/8									
	P/R port	Push-in fitting $\phi 8$, $\phi 10$									

Refer to page 11 for weight.

Descriptions	MW3GA2-MW4GA2			
	When turned ON		When turned OFF	
Response time ms	2-position	Single	22	24
		Double	26	-
	3-position	A/B/R connection	25	35

Response time is measured at 0.5MPa, 20°C and oil free. Response time may vary depending on pressure and quality of oil.

Flow characteristics

Model no.	Solenoid position	P → A/B		A/B → R	
		C [dm ³ / (s·bar)]	b	C [dm ³ / (s·bar)]	b
MW3GA2	2-position	2.2	0.35	1.7	0.25
	3-position	All ports closed	2	0.36	2.2
A/B/R connection		2.1	0.34	1.7	0.26
P/A/B connection		2.3	0.35	2.3	0.27

Note 1 : Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Note 2 : Effective sectional area of 2 position and ABR connection is the value when a check valve is integrated.

Ozone specifications

Coolant proof specifications

Can be selected with "G" option "A" in How to Order on Pages 7, 9.

Reduced wiring specifications

Descriptions	T10	T20	T30	T51	T53
type	Common gland M3 screw type	Multi-connector	D-sub connector	20P Flat cable connector Without power supply terminal	26P Flat cable connector Without power supply terminal
Connector	-	HIROSE ELECTRIC CO. LTD. RM21WTP-20S 20 pins	MIL standards D-sub connector 25 pins	MIL-C-83503 standards Pressure welding socket 20 pins	MIL-C-83503 standards Pressure welding socket 26 pins

Serial transmission slave unit specifications(refer to page 84 for applicable PLC table.)

Descriptions	Network name Slave unit model no.	CC-Link(Ver1.10)			DeviceNet Note 1			AS-i(Ver2.0)	
		T8G1	T8G2	T8G7	T8D1	T8D2	T8D7	T8MA	T8M6
Communication speed		156K/625K/2.5M/5M/10Mbps			125K/250K/500Kbps			167Kbps	
Power voltage	Unit side	DC24V+10%			DC24V+10%			DC30V±2%	
	Valve side	DC24V+10%, -5%			DC24V+10%, -5%			DC24V+10%, -5%	
	Communication side	-			DC11 to 25V			-	
Current consumption	Unit side	60mA or less	100mA or less	75mA or less Note 2	70mA or less	90mA or less	80mA or less Note 2	60mA or less Note 2	90mA or less Note 2
	Valve side	15 ma or less (when all points are turned off)			15 ma or less (when all points are turned off)			15 ma or less (when all points are turned off)	
	Communication side	-			50mA or less			-	
Input no./output no.		0/16	0/32	16/16	0/16	0/32	16/16	4/4 Note 3	8/8 Note 4
Occupation number		1 station			2 byte	4 byte	4 byte	1 station	2 station
Operating indication		Power supply/communication state			Power supply/communication state/valve power supply			Power supply/communication state	
Other		-			Consult with CKD for EDS file. Note 5			Profile: 7, F Note 6	

Note 1 : Compatible with other DeviceNet complaint networks (DLNK, etc.).

Note 2 : If the input block,s power supply is common with the unit power supply, calculate with the following equation.

(unit side current consumption) = [*] + (35mA X input block no.) + (sum of internal current consumption of connected sensors)

[*] T8G7 : 60mA, T8D7 : 80mA, T8MA : 60mA, T8M6 : 90mA

However, select a sensor so that unit side current consumption will be 600mA or less(for T8G7 and T8D7), or 250mA or less (for T8MA and T8M6)

Note 3 : When using the 4-point input/4-point output slave unit (T8MA), all outputs are dedicated for the valve.

Note 4 : Two addresses must be set for the 8-point input/8-point output type slave unit (T8M6). (The automatic address setting function cannot be used.)

Note 5 : EDS file : Text file of parameters for communicating with each company's master.

Note 6 : Profile : Definition of slave I/O data and parameter meanings when communicating with master. (Defined in AS-i specifications)

I/O block

● I/O block

Model no.	NW4GA2- IN-N-K	NW4GA2- IN-N-B	NW4GA2- IN-P-K	NW4GA2- IN-P-B
Descriptions				
Input no.	4 points			
Rated input voltage	DC24V			
Rated input current	7mA			
ON voltage	DV15V and over (between each input terminal and V)		DV15V and over (between each input terminal and G)	
OFF voltage/OFF current	DC5V or less (between each input terminal and V)/1.5mA or less		DC5V or less (between each input terminal and G)/1.5mA or less	
Input type	Sink type		Source type	
Power supply	Common with unit power supply	External power supply	Common with unit power supply	External power supply
Operating indication	Power supply/input status			

Note1 : Refer to page 59 for model no.

● Output block

Model no.	NW4GA2-OUT-N-B	NW4GA2-OUT-P-B
Descriptions		
Output no.	4 points	
Rated voltage	DC24V	
Max. load current	1A/1point(3A/common)	
Residual voltage	1.5V or less	
Output type:	Sink type	Source type
Protective circuit	Over current protection/reverse connection protection	
Fuse	Power supply for external load: DC24V, 5A(can be replaced)	
Operating indication	Power supply/output state	

Note1 : Refer to page 59 for model no.

MW₄GA2-T1/2/3/5 Series

How to order

Common gland/multi-connector/D-sub connector/flat cable connector.

● Manifold model no.

MW4GA2 ① 0 - **C8** - **T10** **W** **H** **D** - **5** - **3**

● Discrete valve block with solenoid valve

NW4GA2 ① 0 - **C8** - **W** **H** - **3**

● Discrete solenoid valve

W4GA2 ① 9 - **C8** - **H** - **3**

① Model no.

② Mount type

③ Solenoid position

④ Station no.

⑤ Voltage

⑥ Port size
Note 1

⑦ Electric connection
Note 2

⑧ Reduced wiring
Refer to Intro 3 for circuit diagram of the solenoid valve.

⑨ Terminal/connector pin array

⑩ Option
Note 8

· Refer to page 65 for cable model no. with D-sub connector.
· Refer to page 80 for cable model no. for flat cable connector.

⚠ Cautions for model No. selection

Fill out " manifold specifications ".

Note 1 : Specify P/R port size with the supply and exhaust block.

Note 2 : If change of AC specifications will be implemented, select a valve block with masking plate as a reserved block.

Note 4 : Blank ... Wired according to the type of installed valve.
W Wiring for double solenoid will apply regardless of type of valve mounted.
W does not need to be designated when the single solenoid is not mounted.

However, for multi connector T20, only double wiring is available. Double wiring will be selected automatically even if "W" is not selected.

Note 5 : The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 6 : The check valve specifications (H) are not available for the 3-position all port block or P/A/B connection. Refer to Page 91 for details on the check valve.

Note 7 : Port P has an integrated filter.

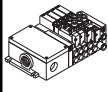
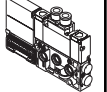

Note 8 : Specify the spacer mounting location and quantity in manifold specifications. Refer to page 59 to 60 for details.

A Model no.					
Manifold		Discrete block with solenoid valve		Discrete solenoid valve	
3 port valve	5 port valve	3 port valve	5 port valve	3 port valve	5 port valve
M W 3 G A 2	M W 4 G A 2	N W 3 G A 2	N W 4 G A 2	W 3 G A 2	W 4 G A 2

Symbol	Descriptions						
B Solenoid position							
1	2-position single solenoid		●		●		●
2	2-position double solenoid		●		●		●
3	3-position all ports closed		●		●		●
4	3-position ABR connection		●		●		●
5	3-position PAB connection		●		●		●
1	2 position single solenoid, normally closed	●		●		●	
11	2 position single solenoid, normally open	●		●		●	
8	Mix manifold	●	●				
C Port size (A/B port)							
C4	φ 4 push-in fitting	●	●	●	●	●	●
C6	φ 6 push-in fitting	●	●	●	●	●	●
C8	φ 8 push-in fitting	●	●	●	●	●	●
CX	Push-in fitting mix	●	●				
6	Rc1/8	●	●	●	●	●	●
D Electric connection							
Blank	Connector relay circuit board specifications for DC.			●	●		
2 to 8	Refer to P.54 for cable length for AC.			●	●		
E Reduced wiring (light and surge suppressor provided as standard)							
Refer to the next page for reduced wiring.							
F Terminal and connector pin array							
Blank	Standard wiring Note 4	●	●	●	●		
W	Double wiring Note 4	●	●	●	●		
G Option							
Blank	No options	●	●	●	●	●	●
M	Non-locking manual override Note 5	●	●	●	●	●	●
M7	Manual override with off function Note 5	●	●	●	●	●	●
H	With check valve Note 6	●	●	●	●	●	●
K	External pilot	●	●				
A	Ozone/coolant proof	●	●	●	●	●	●
F	A/B port filter integrated Note 7	●	●	●	●	●	●
Z1	Supply spacer Note 8	●	●				
Z3	Exhaust spacer Note 8	●	●				
H Mount type							
Blank	Direct mount type	●	●				
D	DIN rail mount type	●	●				
I Station no.							
2 to 18	2 stations to 18 stations			●	●		
<small>(This specification may vary depending on the reduced wiring specifications. Check individual specifications on page 5.)</small>							
J Voltage							
1	AC100V (rectified bridge integrated)	●	●	●	●	●	●
3	DC24V	●	●	●	●	●	●
4	DC12V	●	●	●	●	●	●

is not available.

[Reduced wiring connection table]

A Model no.					
Manifold		Discrete block with solenoid valve		Discrete solenoid valve	
3 port valve	5 port valve	3 port valve	5 port valve	3 port valve	5 port valve
					
M	M	N	N	W	W
W	W	W	W	3	4
3	4	3	4	G	G
G	G	G	G	A	A
A	A	A	A	2	2
2	2	2	2		

E Reduced wiring(light and surge suppressor provided as standard)						
T10	Common gland (M3 screw) Left	●	●			
T20	Multi connector Left Note 3	●	●			
T30	D-sub connector Left Note 3	●	●			
T51	20 pin flat cable connector w/o power supply terminal Left	●	●			
T53	26 pin flat cable connector w/o power supply terminal Left	●	●			

Note 3 : Multi-connector(T20)/D-sub connector(T30)/flat cable connector(T5*) specifications do not have AC100V options.

MW₄GA2-T8 Series

How to order

Serial transmission

● Manifold model no.

MW4GA2 1 0 - **C8** - **T8G1WH** D - 5 - 3

● Discrete valve block with solenoid valve

NW4GA2 1 0 - **C8** - **WH** - 3

● Discrete solenoid valve

W4GA2 1 9 - **C8** - **H** - 3

A Model no.

B Solenoid position

H Mount type

I Station no.

J Voltage

C Port size
Note 1

D Electric connection

E Reduced wiring

Refer to the circuit diagram of the solenoid valve on Intro 3.

F Terminal/connector pin array

G Option
Note 8

⚠ Cautions for model No. selection

Fill out " manifold specifications ".

Note 1 : Specify P/R port size with the supply and exhaust block.

Note 2 : Blank ... Wired based on the type of valve used.

W All wired for the double solenoid regardless of the type of valve used.

W does not need to be designated when the single solenoid is not mounted.

Note 3 : The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 4 : The check valve specifications (H) are not available for the 3-position all port block or P/A/B connection.

Refer to Page 91 for details on the check valve.

Note 5 : Port P has an integrated filter.

Note 6 : Indicate I/O format of I/O block (sink/s fix the connector).

Note 7 : 100 VAC and 12 VDC settings are not available for the serial transmission connection specifications. Specify the spacer mounting location and quantity in manifold specifications.

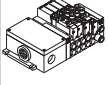
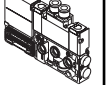
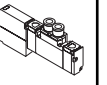



Refer to page 59 to 60 for details.

A Model no.					
Manifold		Discrete block with solenoid valve		Discrete solenoid valve	
3 port valve	5 port valve	3 port valve	5 port valve	3 port valve	5 port valve
M W 3 G A 2	M W 4 G A 2	N W 3 G A 2	N W 4 G A 2	W 3 G A 2	W 4 G A 2

Symbol	Descriptions						
B Solenoid position							
1	2-position single solenoid		●		●		●
2	2-position double solenoid		●		●		●
3	3-position all ports closed		●		●		●
4	3-position ABR connection		●		●		●
5	3-position PAB connection		●		●		●
1	2 position single solenoid, normally closed	●		●		●	
11	2 position single solenoid, normally open	●		●		●	
8	Mix manifold	●	●				
C Port size (A/B port)							
C4	φ 4 push-in fitting	●	●	●	●	●	●
C6	φ 6 push-in fitting	●	●	●	●	●	●
C8	φ 8 push-in fitting	●	●	●	●	●	●
CX	Push-in fitting mix	●	●				
6	Rc1/8	●	●	●	●	●	●
D Electric connection							
Blank	Connector relay circuit board specifications for DC.			●	●		
E Reduced wiring (light and surge suppressor provided as standard)							
Refer to the next page for reduced wiring.							
F Terminal and connector pin array							
Blank	Standard wiring	Note 2	●	●	●	●	
W	double wiring	Note 2	●	●	●	●	
G Option							
Blank	No options		●	●	●	●	●
M	Non-locking manual override	Note 3	●	●	●	●	●
M7	Manual override with off function	Note 3	●	●	●	●	●
H	With check valve	Note 4	●	●	●	●	●
K	External pilot		●	●			
A	Ozone/coolant proof		●	●	●	●	●
F	A/B port filter integrated	Note 5	●	●	●	●	●
Y**	I/O block	Note 6 (Specify I/O block combination number in ** according to table 1 [I/O block combination table].)	●	●			
Z1	Supply spacer	Note 8	●	●			
Z3	Exhaust spacer	Note 8	●	●			
H Mount type							
Blank	Direct mount type		●	●			
D	DIN rail mount type		●	●			
I Station no.							
2	2 stations	(Differs depending on the reduced wiring connection specifications. Check individual specifications on page 11.)					
to	to		●	●			
16	16 stations						
J Voltage							
3	DC 24V	Note 7	●	●	●	●	●

is not available.

[Reduced wiring connection table]

A Model no.					
Manifold		Discrete block with solenoid valve		Discrete solenoid valve	
3 port valve	5 port valve	3 port valve	5 port valve	3 port valve	5 port valve
					
M W 3 G A 2	M W 4 G A 2	N W 3 G A 2	N W 4 G A 2	W 3 G A 2	W 4 G A 2

E Reduced wiring (light and surge suppressor provided as standard)						
T8G1	Serial transmission CC-Link	16 points output	●	●		
T8G2		32 points output	●	●		
T8G7		16 points input/16 points output	●	●		
T8D1	Serial transmission DeviceNet	16 points output	●	●		
T8D2		32 points output	●	●		
T8D7		16 points input/16 points output	●	●		
T8MA	Serial transmission	4 points input/4 points output	●	●		
T8M6	AS-i	8 points input/8 points output	●	●		

Table 1 (I/O block combination)

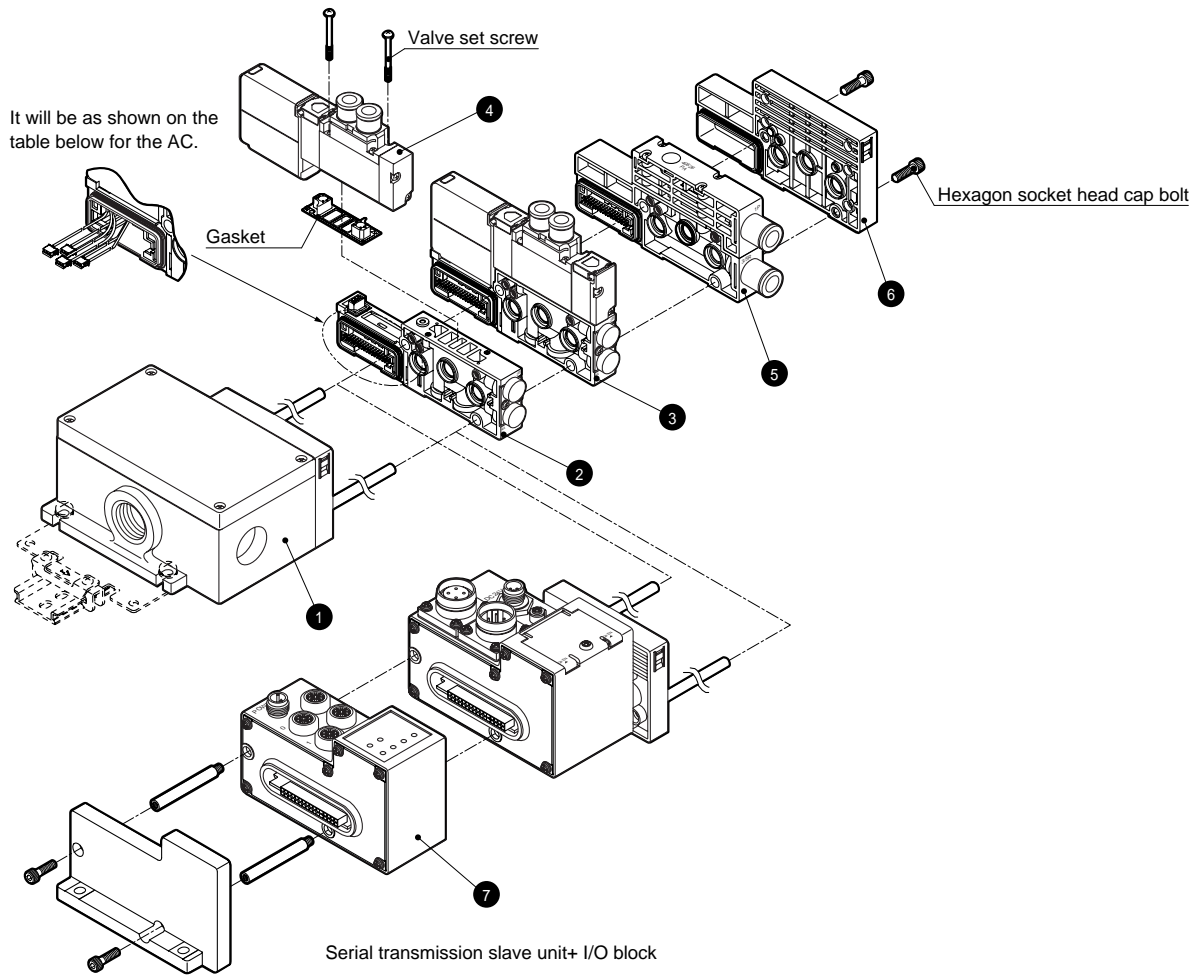
Symbol	Layout and station no. of I/O block.					
Y10						IN
Y20						IN IN
Y30				IN	IN	IN
Y40			IN	IN	IN	IN
Y01						OUT
Y02						OUT OUT
Y03						OUT OUT OUT
Y04						OUT OUT OUT OUT
Y11						OUT IN
Y21						OUT IN IN
Y31						OUT IN IN IN
Y41						OUT IN IN IN IN
Y12						OUT OUT IN
Y22						OUT OUT IN IN
Y32						OUT OUT IN IN IN
Y42						OUT OUT IN IN IN IN

Transmission block side

*1: How to read the table
 E.g.) Y11 is a combination of an input block (4 points)
 and an output block (4points)
 *2: Refer to P.81 for details of I/O point number compatible
 with wiring method T8*.

MW₄GA2-T1/2/3/5/8 Series

Manifold components explanation and parts list



Main parts list (refer to page 51 to 65 for details)

Model no.	Component name	Model no. (example)	Model no.	Component name	Model no. (example)
1	Wiring block	NW4GA2-T10	5	Supply and exhaust block	NW4G2-Q-10
2	Discrete valve block	NW4GA2-V1	6	End block R	NW4G2-ER
3	Discrete valve block with solenoid valve	NW4GA220-C8-H-3	7	I/O block	NW4GA2-IN-N-B
4	Discrete solenoid valve	W4GA219-C8-H-3			

Weight (for DC) NW4GA2

Block type	Weight	Block type	Weight
Valve block with solenoid valve	NW3GA210	Valve block with masking plate	NW4GA2-MP _D ^S
	NW3GA2110	Wiring block (serial transmission slave unit)	NW4GA2-T8*
	NW4GA210	I/O block	NW4GA2- $\text{OUT} - \frac{3}{5} - \frac{8}{5}$
	NW4GA220		
	NW4GA2 $\frac{3}{5}$		

Common

Block type	Weight	Block type	Weight
Supply and exhaust block	NW4G2-Q-*	Wiring block	NW4G2-T10
	NW4G2-QK-*		NW4G2-T20
	NW4G2-QZ-*		NW4G2-T30
	NW4G2-QKZ-*		NW4G2-T5*
End block	NW4G2-ER		
	NW4G2-EXR		

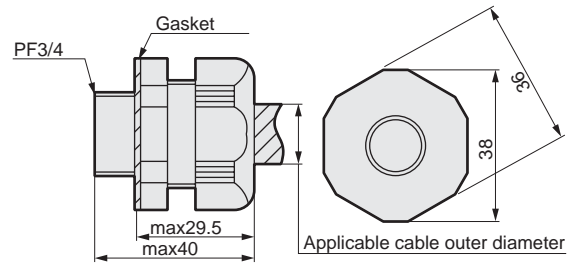
Repair parts and related parts list

Model no.	Parts name	Model no.
-	φ 4 straight	4G2-JOINT-C4
Push-in fitting and related parts	φ 6 straight	4G2-JOINT-C6
	φ 8 straight	4G2-JOINT-C8
	Plug cartridge	4G2-JOINT-CPG

Parts kit for Wiring block T10

● Cable clamp

Model no.	Applicable cable outer diameter	Descriptions
W4G-SCL-18A	φ 14.5 to 16.5	Use to provide dustproof and jet-proof protection for the cable.
W4G-SCL-18B	φ 16.5 to 18.5	

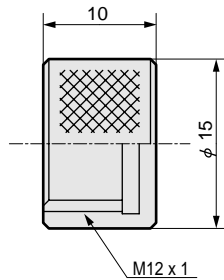


(reference value)
 Body tightening torque 4.0 to 2.5 N·m
 Cable clamp tightening torque 30 to 3.5N·m

Parts for I/O block

● Water proof cap

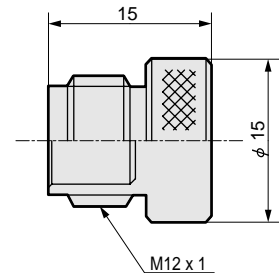
Model no.	Descriptions
W4G-XSZ-11	If the same power supply is shared with serial transmission slave unit, this is used for jet proof protection of power supply connector.



(reference value)
 Tightening torque 0.4 to 0.5 N·m

● Water proof plug

Model no.	Descriptions
W4G-XSZ-12	Used to provide jet-proof protection for idle signal connectors.



(reference value)
 Tightening torque 0.4 to 0.5 N·m

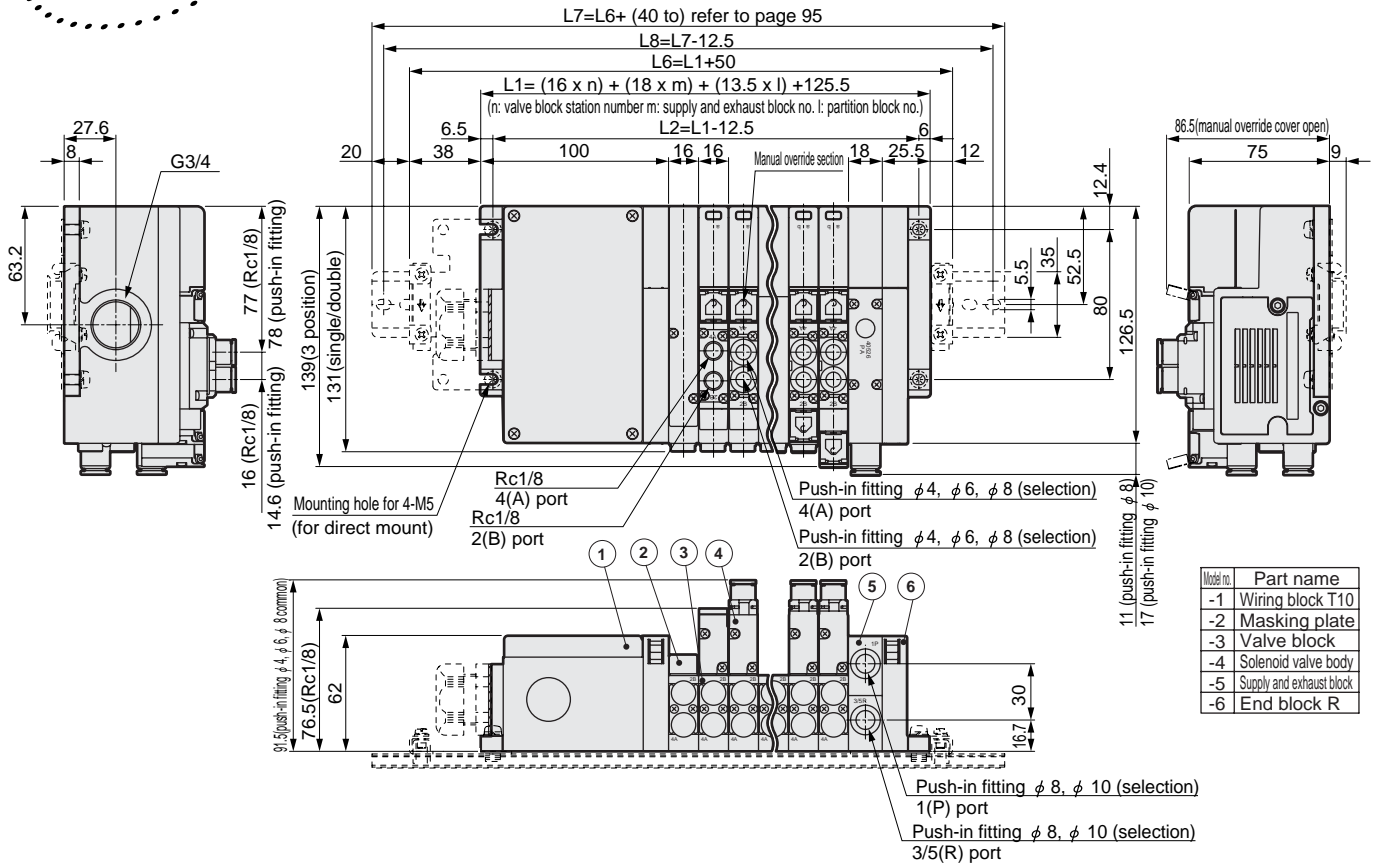
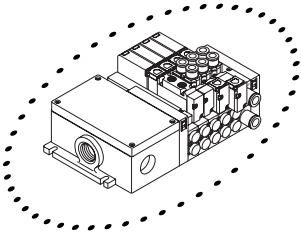
MW₄GA2-T1/2/3/5/8 Series

Dimensions

Unit mm

MW4GA2

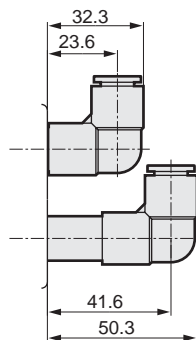
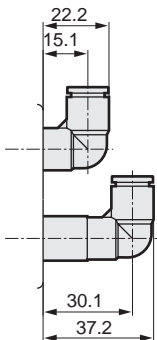
- Common gland (T10)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

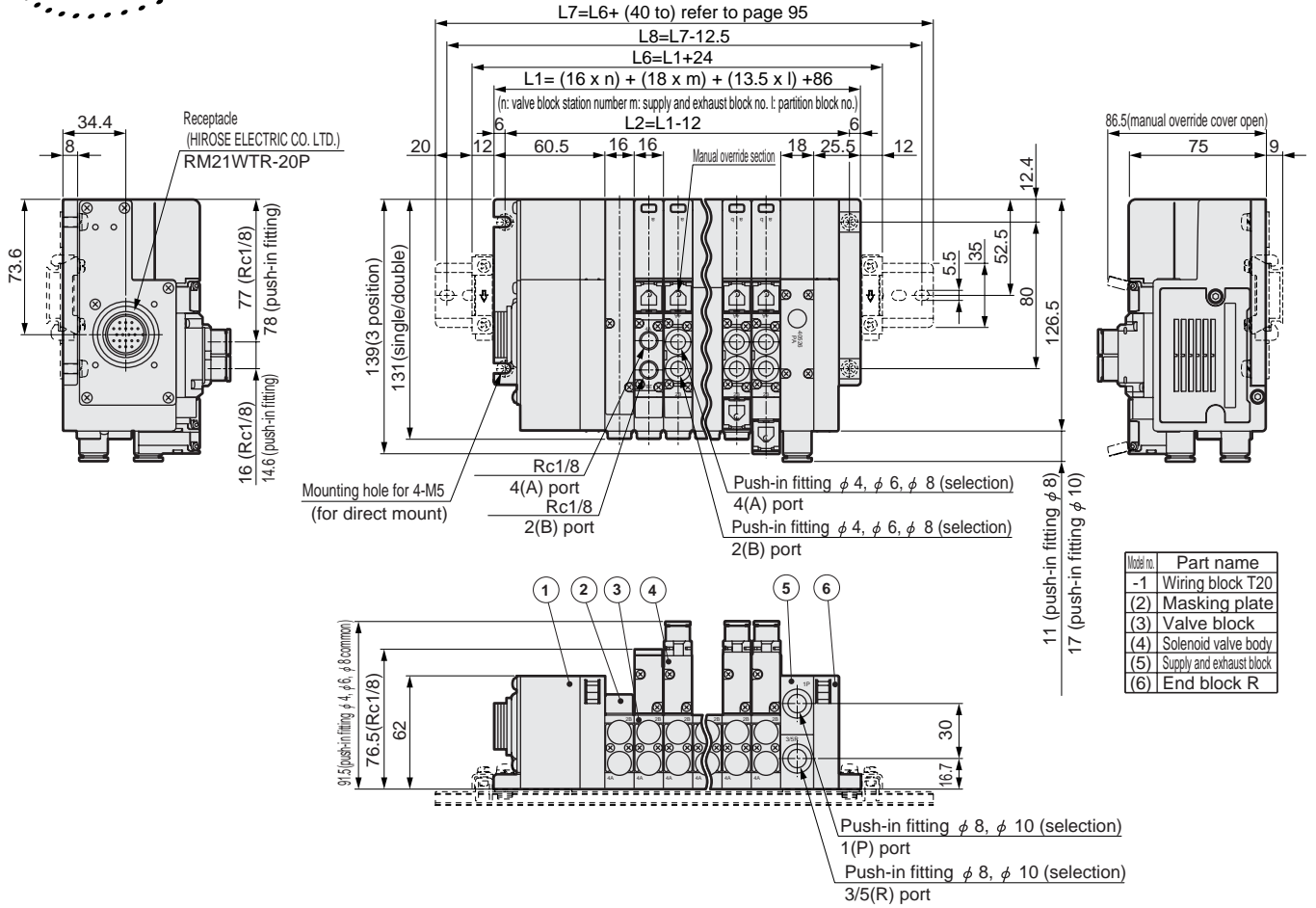
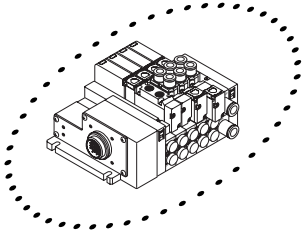
- $\phi 10$ (CL10)



Dimensions

MW4GA2

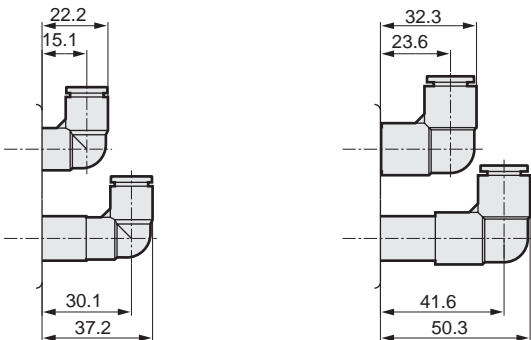
- Multi-connector (T20)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)



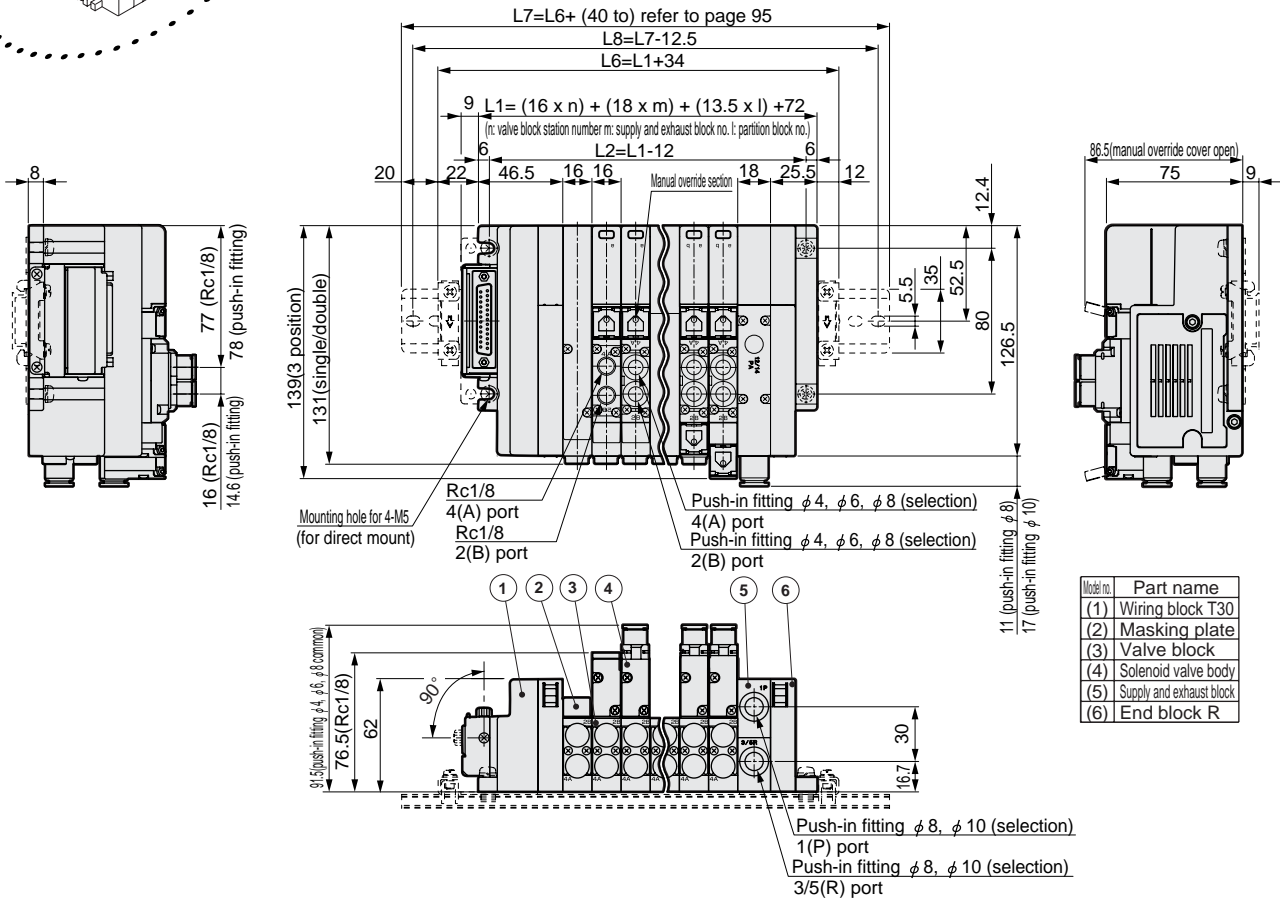
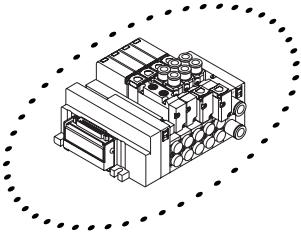
MW₄GA2-T1/2/3/5/8 Series

Dimensions

Unit mm

MW4GA2

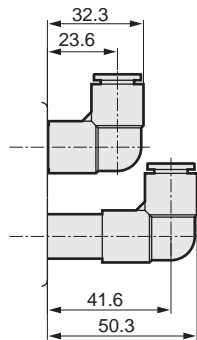
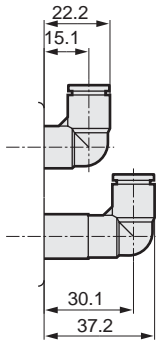
- D sub-connector (T30)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)

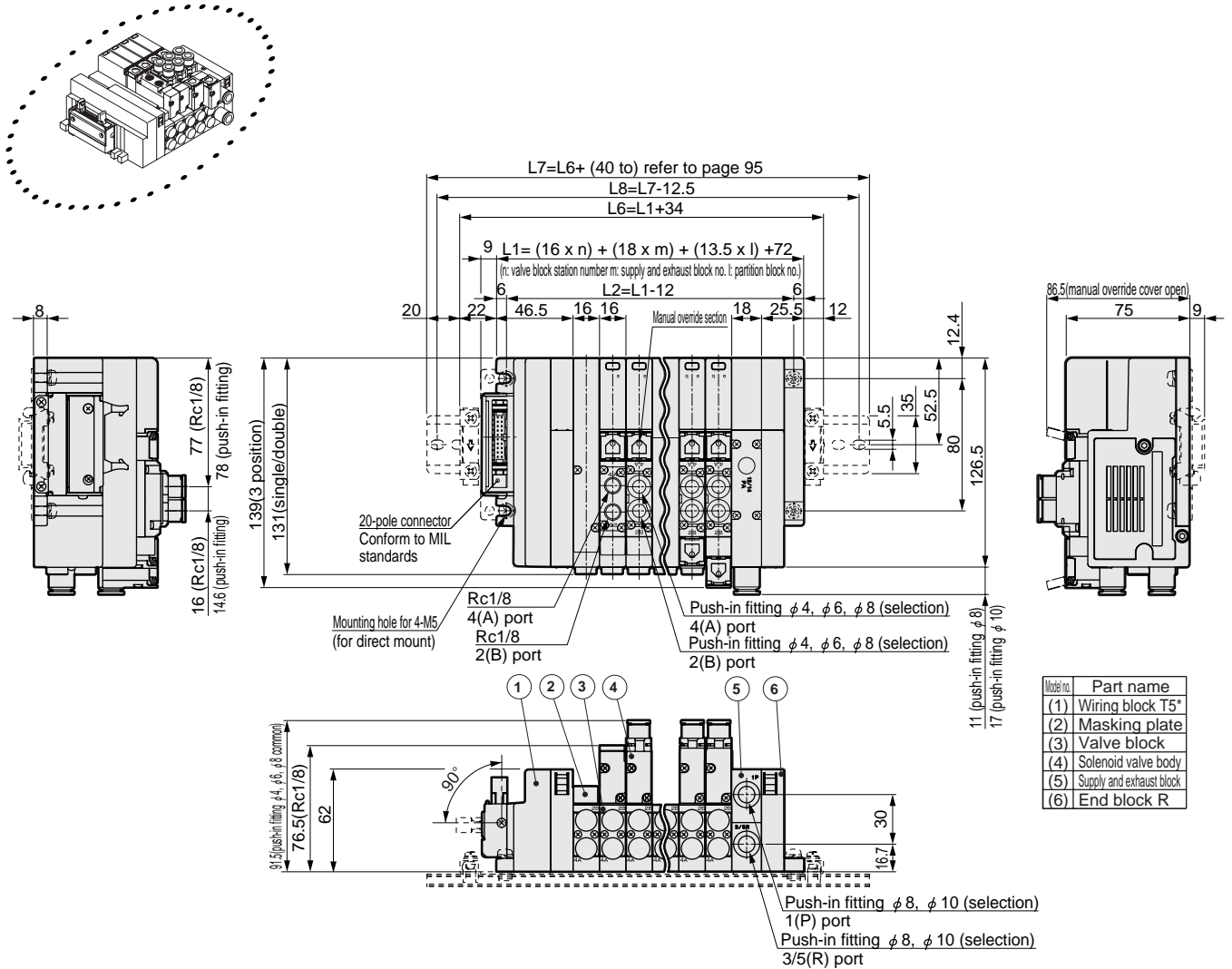


Dimensions

MW4GA2

- Flat cable connector (T5*)

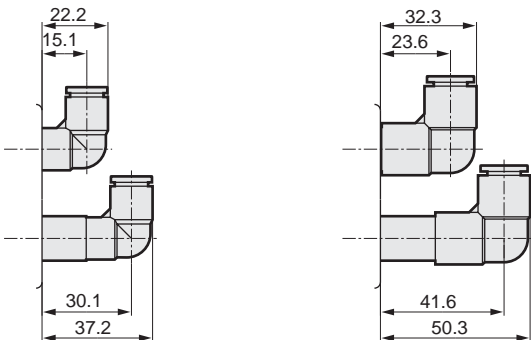
*This drawing is for T51.
T53 is available for the flat cable connector
Dimensions are same as T51.



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)



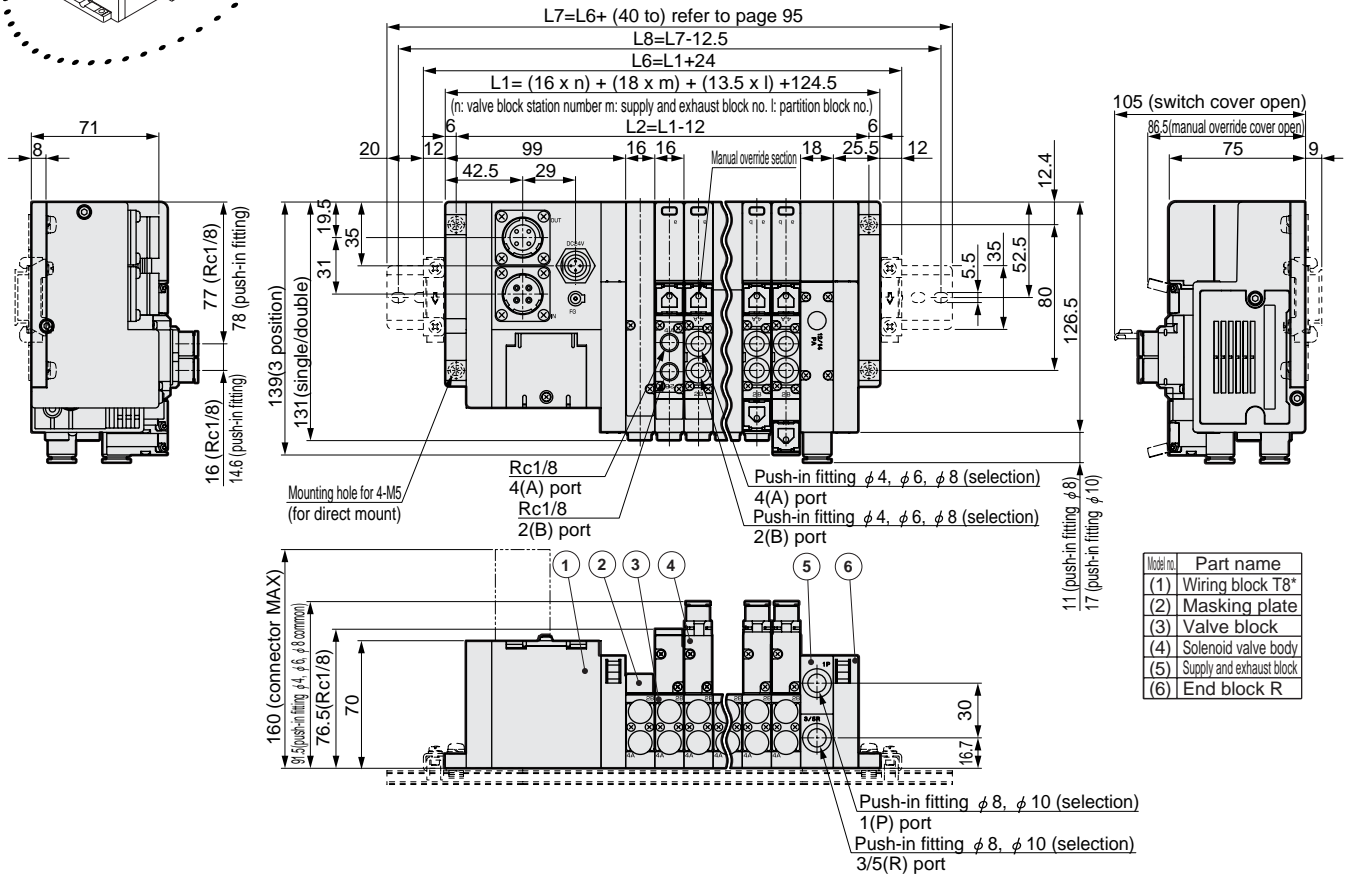
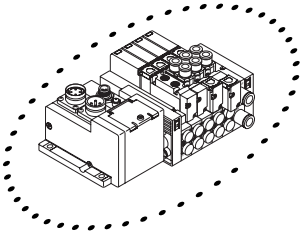
MW₄GA2-T1/2/3/5/8 Series

Dimensions

Unit mm

MW4GA2

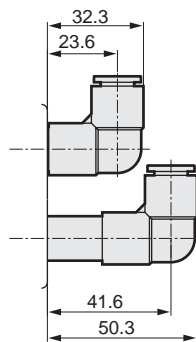
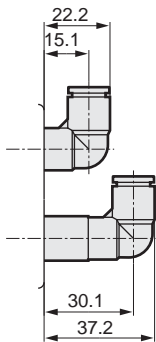
- Serial transmission CC-Link (T8G*)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

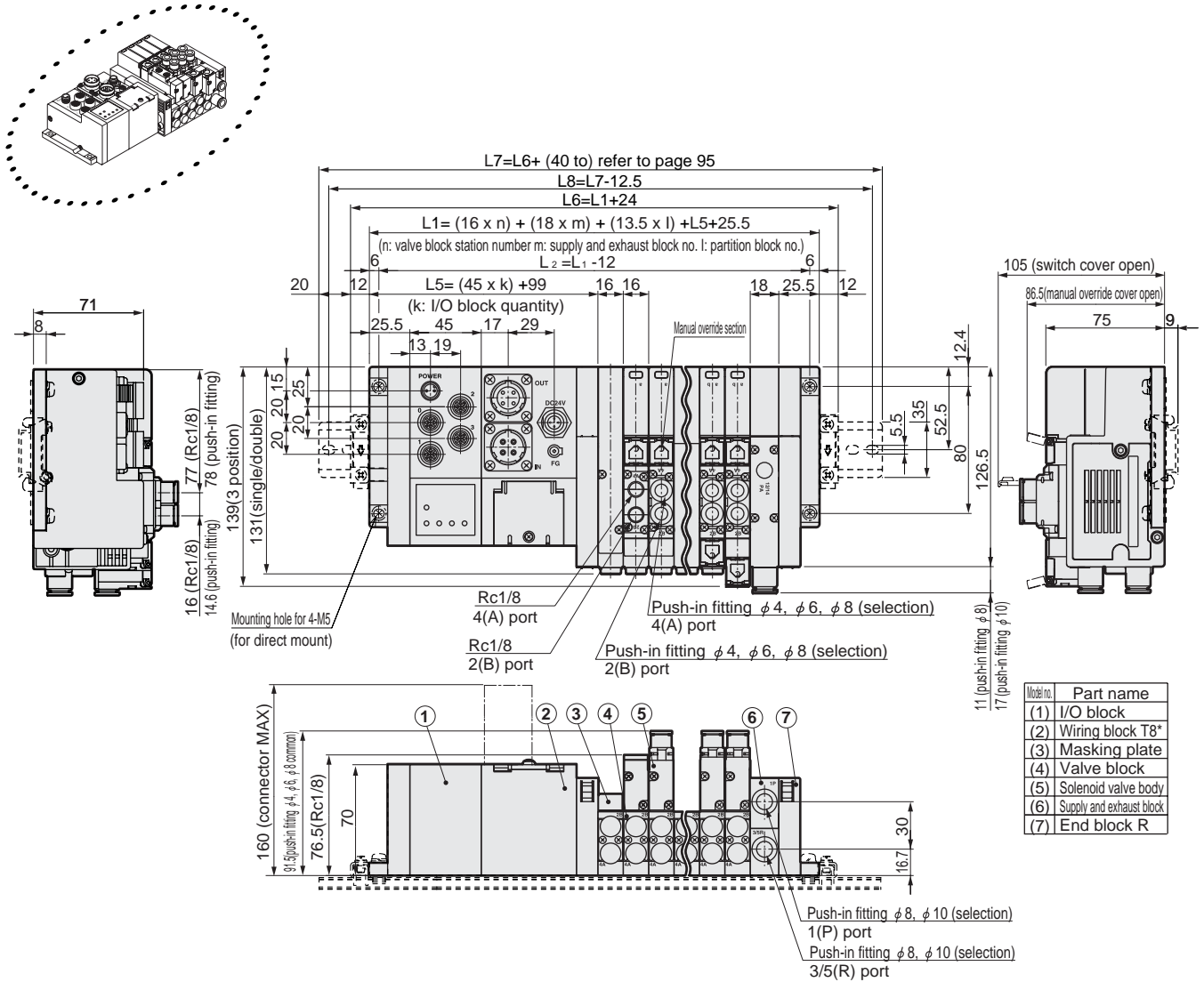
- $\phi 10$ (CL10)



Dimensions

MW4GA2

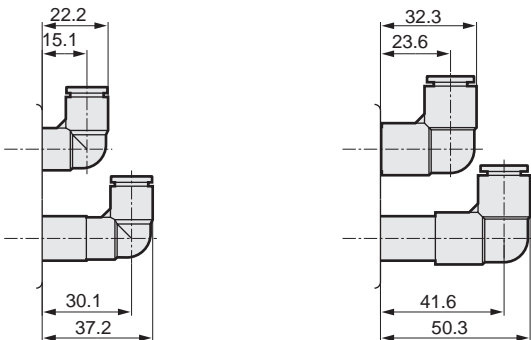
- Serial transmission CC-Link (T8G*) + I/O block



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)



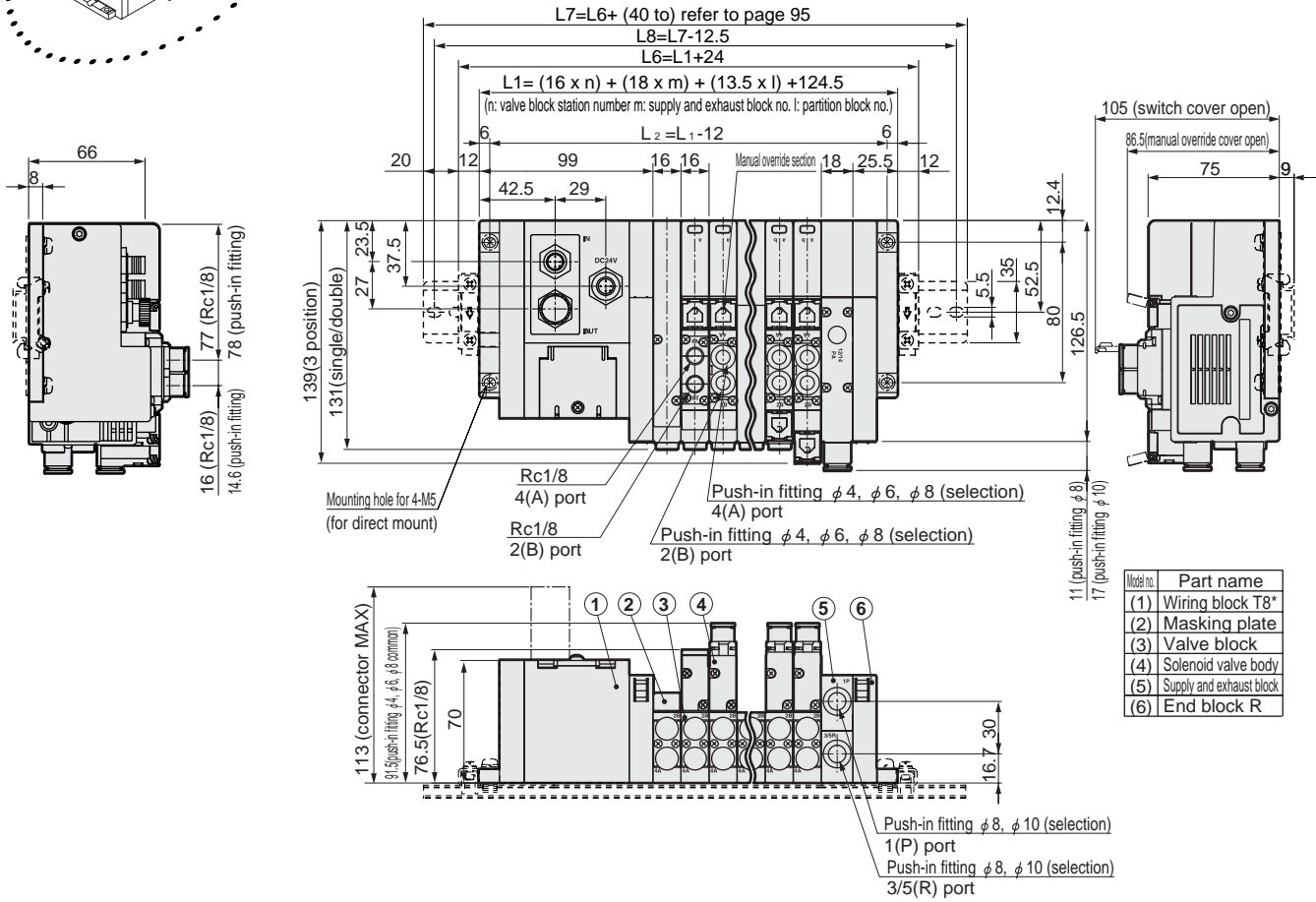
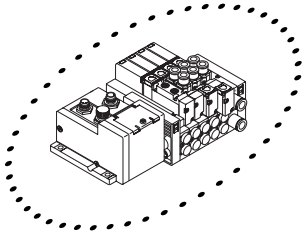
MW₄GA2-T1/2/3/5/8 Series

Dimensions

Unit mm

MW4GA2

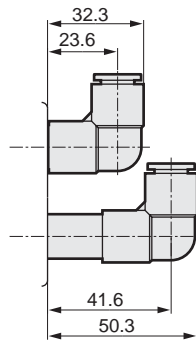
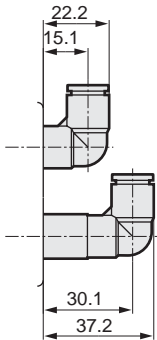
- Serial transmission DeviceNet (T8D*)



- Push-in fitting L type for supply and exhaust block (upward)

- ϕ 8 (CL8)

- ϕ 10 (CL10)

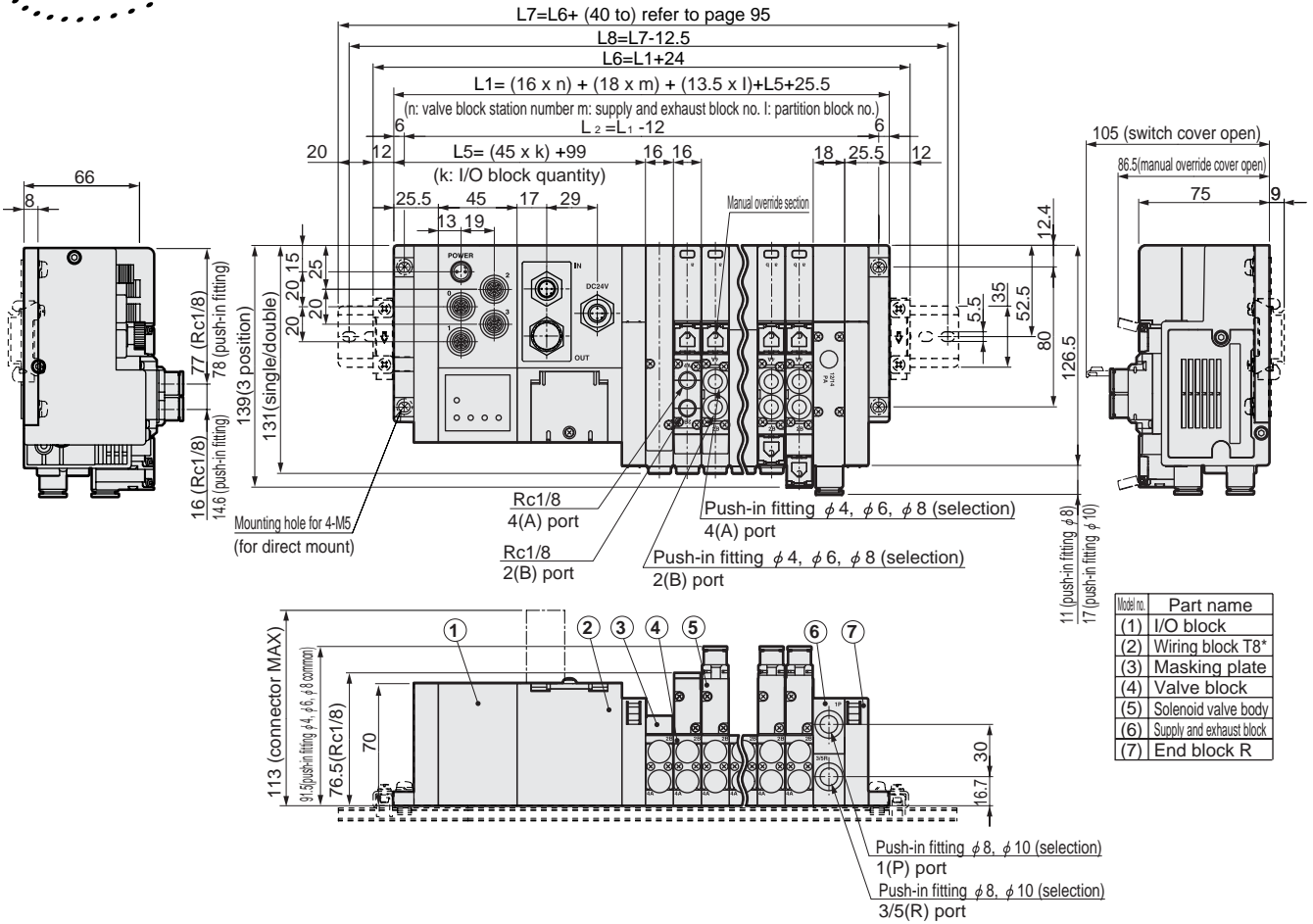
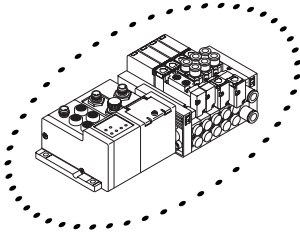


Dimensions

Unit mm

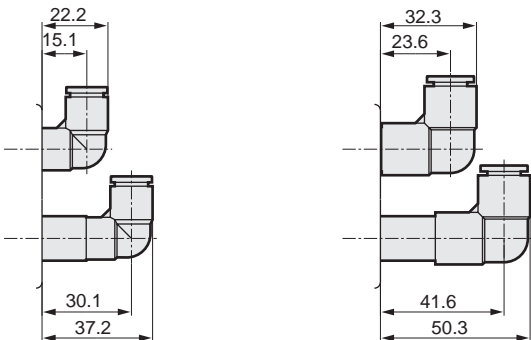
MW4GA2

- Serial transmission slave unit DeviceNet (T8D*) + I/O block



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)
- $\phi 10$ (CL10)



Reduced wiring

Body porting

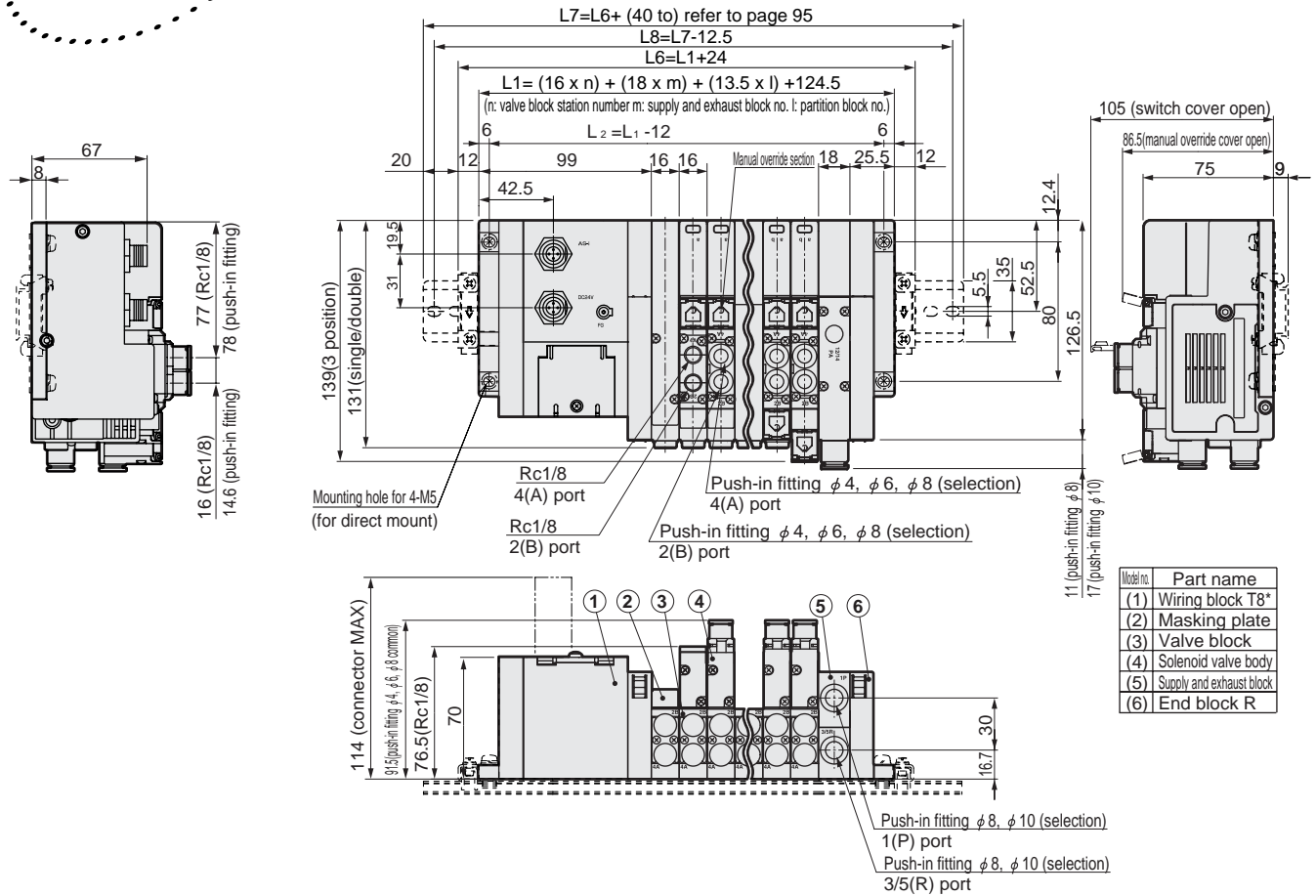
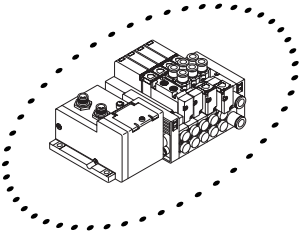
MW₄GA2-T1/2/3/5/8 Series

Dimensions

Unit mm

MW4GA2

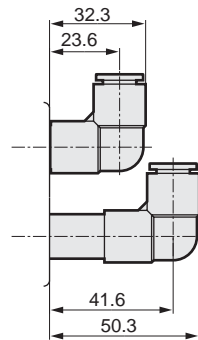
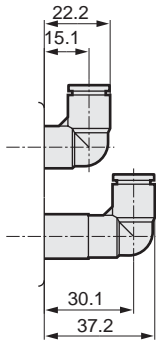
- Serial transmission AS-i (T8M*)



- Push-in fitting L type for supply and exhaust block (upward)

- φ 8 (CL8)

- φ 10 (CL10)

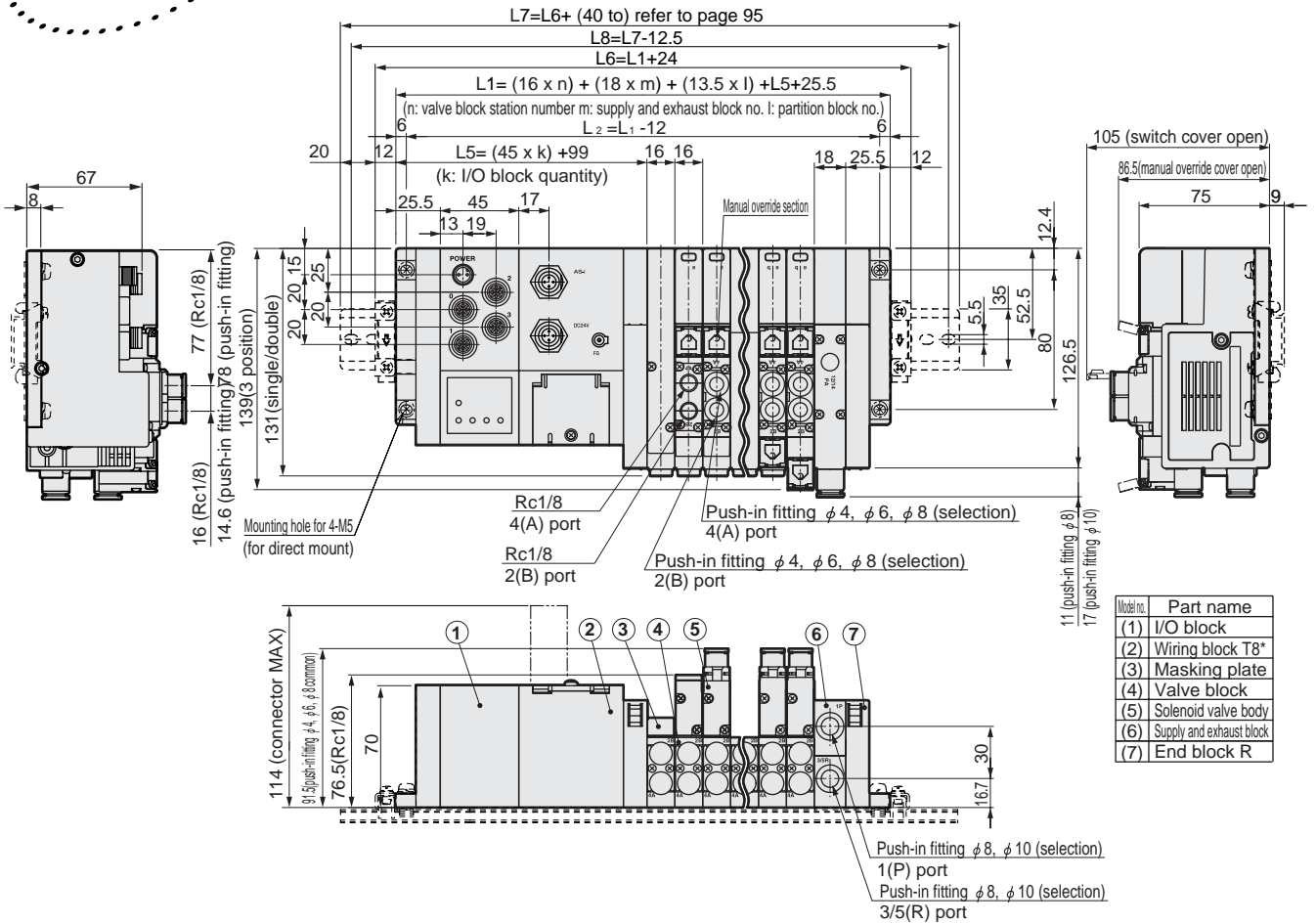
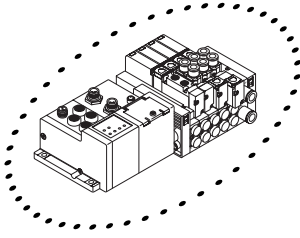


Dimensions

Unit mm

MW4GA2

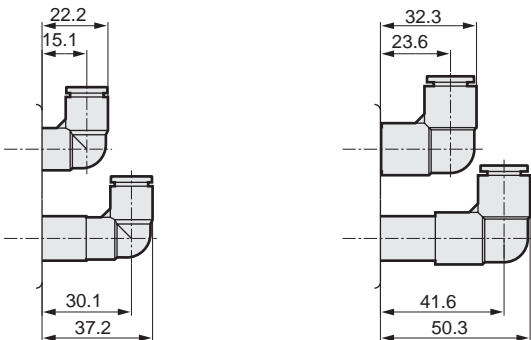
- Serial transmission AS-i (T8M*) + I/O block

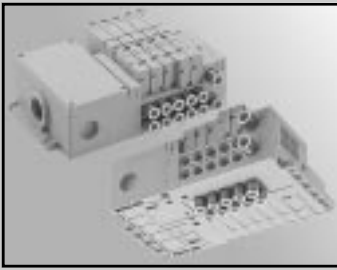


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)





Reduced wiring manifold

Base side porting and rear porting

MW4GB^B2-T1/2/3/5/8 Series

● Applicable cylinder bore size: $\phi 20$ to $\phi 80$



Manifold common specifications

Descriptions	MW4GB2	MW4GZ2
Manifold type	Block manifold	
Supply and exhaust method	Common supply/common exhaust (check valve integrated)	
Pilot exhaust method	Internal pilot	Main valve/pilot valve common exhaust (pilot exhaust check valve integrated)
	External pilot	Main valve and pilot valve individual exhaust
Piping direction	Sub-base side porting	Sub-base bottom porting
Type of valve / operation method	Pilot operated soft spool valve	
Working fluid	Compressed air	
Max. working pressure MPa	0.7	
Min. working pressure MPa	0.2	
Withstanding pressure MPa	1.05	
Ambient temperature °C	-10 to 55 (to be unfrozen)	
Fluid temperature °C	5 to 55	
Manual override	Locking/non-locking common type	
Lubrication Note 1	Not required	
Protective structure Note 2	Dust/jet-proof (IP65) Note 3	
Vibration / impact m/s ²	50 or less / 300 or less	
Working environment	Not subject to corrosive gas, etc.	

Note 1 : Use turbine oil Class 1 ISO VG32 if lubricated.

Excessive lubrication will lead to unstable operation.

Note 2 : IP 65 (IEC 60529 (IEC 529: 1989-11)) standards are applied to the test. Refer to Intro 12 for details.

Note 3 : The D-sub connector (T30) and flat cable connector (T5*) have a dustproof protective structure. Check that water drops or oil, etc., do not come into contact.

Electrical specifications

Descriptions	W4GB2	
Rated voltage V	DC	12,24
	AC	100
Rated voltage fluctuation range	$\pm 10\%$	
Holding current A	DC24V	0.025
	DC12V	0.05
	AC100V	0.012
Power consumption W	DC24V	0.6
	Note 4 DC12V	0.6
Apparent power VA	AC100V	1.2
		Note 5
Heat proof class	B	

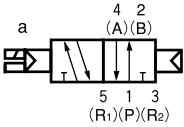
Note 4 : Surge suppressor and indicator are provided as standard.

Note 5 : AC100V is not available for multi-connector/D-sub connector/flat cable connector specifications. 100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

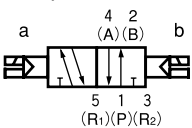
JIS symbol

● 5 port valve

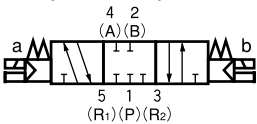
2-position single solenoid



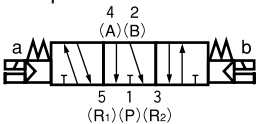
2-position double solenoid



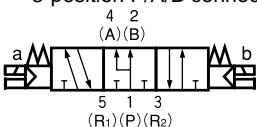
3-position all ports closed



3-position A/B/R connection



3-position P/A/B connection



Individual specifications

Descriptions	MW4GB2-MW4GZ2										
	T10	T20	T30	T51	T53	T8G1 T8D1	T8G2 T8D2	T8G7 T8D7	T8MA	T8M6	
Maximum station number	Standard wiring	18	-	18	18	18	16	18	16	4	8
	double wiring	9	8	12	9	12	8	16	8	2	4
Maximum solenoid number	18	16	24	18	24	16	32	16	4	8	
Port size	A/B port	Push-in fitting $\phi 4$, $\phi 6$, $\phi 8$, Rc1/8									
	P/R port	Push-in fitting $\phi 8$, $\phi 10$									

Refer to page 29 for weight.

Descriptions	MW4GB2-MW4GZ2		
	When turned ON		When turned OFF
Response time ms	2-position	Single	22
		Double	26
	3-position	A/B/R connection	25

Response time is measured at 0.5MPa, 20°C and oil free. Response time may vary depending on pressure and quality of oil.

Flow characteristics

Model no.	Solenoid position	P → A/B		A/B → R		
		C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b	
MW4GB2	2-position	2.4	0.36	1.7	0.25	
	All ports closed	2.1	0.37	2.2	0.22	
MW4GZ2	3-position	A/B/R connection	2.2	0.35	1.7	0.25
		P/A/B connection	2.3	0.32	2.3	0.24

Note 1 : Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Note 2 : Effective sectional area of 2 position and ABR connection is the value when a check valve is integrated.

Ozone specifications

Coolant proof specifications

Can be selected with "G" option "A" in How to Order on Pages 25, 27.

Reduced wiring specifications

Descriptions	T10	T20	T30	T51	T53
type	Common gland M3 screw type	Multi-connector	D-sub connector	20P Flat cable connector Without power supply terminal	26P Flat cable connector Without power supply terminal
Connector	-	HIROSE ELECTRIC CO. LTD. RM21WTP-20S 20 pins	MIL standards D-sub connector 25 pins	MIL-C-83503 standards Pressure welding socket 20 pins	MIL-C-83503 standards Pressure welding socket 26 pins

Serial transmission slave unit specifications(refer to page 84 for applicable PLC table.)

Descriptions	Network name	CC-Link(Ver1.10)			DeviceNet Note 1			AS-i (Ver2.0)	
	Slave unit model no.	T8G1	T8G2	T8G7	T8D1	T8D2	T8D7	T8MA	T8M6
Communication speed		156K/625K/2.5M/5M/10Mbps			125K/250K/500Kbps			167Kbps	
Power voltage	Unit side	DC24V+10%			DC24V+10%			DC30V±2%	
	Valve side	DC24V+10%, -5%			DC24V+10%, -5%			DC24V+10%, -5%	
	Communication side	-			DC11 to 25V			-	
Current consumption	Unit side	60mA or less	100mA or less	75mA or less Note 2	70mA or less	90mA or less	80mA or less Note 2	60mA or less Note 2	90mA or less Note 2
	Valve side	15 ma or less (when all points are turned off)			15 ma or less (when all points are turned off)			15 ma or less (when all points are turned off)	
	Communication side	-			50mA or less			-	
Input no./output no.		0/16	0/32	16/16	0/16	0/32	16/16	4/4 Note 3	8/8 Note 4
Occupation number		1 station			2 byte	4 byte	4 byte	1 station	2 station
Operating indication		Power supply/communication state			Power supply/communication state/valve power supply			Power supply/communication state	
Other		-			Consult with CKD for EDS file. Note 5			Profile: 7, F Note 6	

Note 1 : Compatible with other DeviceNet complaint networks (DLNK, etc.).

Note 2 : If the input block's power supply is common with the unit power supply, calculate with the following equation.

$$(\text{unit side current consumption}) = \text{[*]} + (35\text{mA} \times \text{input block no.}) + (\text{sum of internal current consumption of connected sensors})$$

[*] T8G7 : 60mA, T8D7 : 80mA, T8MA : 60mA, T8M6 : 90mA

However, select a sensor so that unit side current consumption will be 600mA or less(for T8G7 and T8D7), or 250mA or less (for T8MA and T8M6)

Note 3 : When using the 4-point input/4-point output slave unit (T8MA), all outputs are dedicated for the valve.

Note 4 : Two addresses must be set for the 8-point input/8-point output type slave unit (T8M6). (The automatic address setting function cannot be used.)

Note 5 : EDS file: Text file of parameters for communicating with each company's master.

Note 6 : Profile: Definition of slave I/O data and parameter meanings when communicating with master. (Defined in AS-i specifications)

I/O block

● Output block

Model no.	NW4GB2- IN-N-K	NW4GB2- IN-N-B	NW4GB2- IN-P-K	NW4GB2- IN-P-B
Input no.	4 points			
Rated input voltage	DC24V			
Rated input current	7mA			
ON voltage	DV15V and over (between each input terminal and V)		DV15V and over (between each input terminal and G)	
OFF voltage/OFF current	DC5V or less (between each input terminal and V)/1.5mA or less		DC5V or less (between each input terminal and G)/1.5mA or less	
Input type	Sink type		Source type	
Power supply	Common with unit power supply	External power supply	Common with unit power supply	External power supply
Operating indication	Power supply/input status			

Note1 : Refer to page 59 for model no.

● Output block

Model no.	NW4GB2-OUT-N-B	NW4GB2-OUT-P-B
Output no.	4 points	
Rated voltage	DC24V	
Max. load current	1A/1point(3A/common)	
Residual voltage	1.5V or less	
Output type:	Sink type	Source type
Protective circuit	Over current protection/reverse connection protection	
Fuse	Power supply for external load: DC24V, 5A(can be replaced)	
Operating indication	Power supply/output state	

Note1 : Refer to page 59 for model no.

MW4GB^B2-T1/2/3/5 Series

How to order

Common gland/multi-connector/D-sub connector/flat cable connector.

● Manifold model no.

MW4GB2 1 0 - C8 - T10 W H D - 5 - 3

MW4GZ2 1 0 - C8 - T10 W H - 5 - 3

● Discrete valve block with solenoid valve

NW4GB2 1 0 - C8 - W H - 3

NW4GZ2 1 0 - C8 - W H - 3

● Discrete solenoid valve (common for Nw4GB2 and NW4GZ2 Note9)

W4GB2 1 9 - 0 H - 3

A Model no.

B Solenoid position

H Mount type

C Port size
Note 1
Note 2

I Station no.

D Electric connection
Note 3

- Refer to page 65 for cable model no. with D-sub connector.
- Refer to page 80 for cable model no. for flat cable connector.

E Reduced wiring
Refer to page 3 for the circuit diagram of the solenoid valve.

F Terminal/connector pin array

G Option
Note 10

⚠ Cautions for model No. selection

Fill out " manifold specifications ".

Note 1 : A or B port plug specifications (*NC/*NO) are available only for the 2-position single.
Specify P/R port size with the supply and exhaust block.

Note 2 : CL* push-in joint L (upward) is used only for the single/double solenoid manifold.
The A port is a long elbow and the B port a short elbow.
A/B port sizes do not differ for push-in joint L (upward) mix (CX).
Short elbow will be installed if CL*NC/NO is selected.

Note 3 : If change of AC specifications will be implemented, select a valve block with masking plate as a reserved block.

Note 5 : Blank ... Wired based on the type of valve used.

W Wiring for double solenoid will apply regardless of type of valve mounted.

W does not need to be designated when the single solenoid is not mounted.

However, for multi connector T20, only double wiring is available. Double wiring will be selected automatically even if "W" is not selected.

Note 6 : The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 7 : The check valve specifications (H) are not available for the 3-position all port block or P/A/B connection.
Refer to Page 91 for details on the check valve.

Note 8 : Port P has an integrated filter.

Note 9 : The discrete solenoid valve used on the discrete valve block with solenoid valve NW4GZ2 is the same one used on W4GB2*9.




Note 10 : Specify the spacer mounting location and quantity in manifold specifications.
Refer to page 59 to 60 for details.

A Model no.				
Manifold		Discrete block with solenoid valve Discrete block		Solenoid valve Discrete
M W 4 G B 2	M W 4 G Z 2	N W 4 G B 2	N W 4 G Z 2	W 4 G B 2

Symbol	Descriptions					
B Solenoid position						
1	2-position single solenoid	●	●	●	●	●
2	2-position double solenoid	●	●	●	●	●
3	3-position all ports closed	●	●	●	●	●
4	3-position ABR connection	●	●	●	●	●
5	3-position PAB connection	●	●	●	●	●
8	Mix manifold	●	●			
C Port size (A/B port)						
C4	φ 4 push-in fitting	●	●	●	●	
C6	φ 6 push-in fitting	●	●	●	●	
C8	φ 8 push-in fitting	●	●	●	●	
CL6	φ 6 push-in fitting L(upward)	●		●		
CL8	φ 8 push-in fitting L(upward)	●		●		
CX	Push-in fitting mix	●	●			
Single plug		A port		B port		
C4NC	φ 4 push-in fitting	Plug		●	●	
C6NC	φ 6 push-in fitting			●	●	
C8NC	φ 8 push-in fitting			●	●	
C4NO	Plug	φ 4 push-in fitting	●	●	●	
C6NO		φ 6 push-in fitting	●	●	●	
C8NO		φ 8 push-in fitting	●	●	●	
CL6NC	φ 6 push-in fitting L(upward)	Plug		●	●	
CL8NC	φ 8 push-in fitting L(upward)			●	●	
CL6NO	Plug			φ 6 push-in fitting L(upward)	●	●
CL8NO		φ 8 push-in fitting L(upward)	●	●		
D Electric connection						
Blank	Connector relay circuit board specifications for DC.			●	●	
2 to 8	Select the AC cable length from page 54.			●	●	
E Reduced wiring(light and surge suppressor provided as standard)						
Refer to the next page for reduced wiring.						
F Terminal and connector pin array						
Blank	Standard wiring	Note 5	●	●	●	●
W	double wiring	Note 5	●	●	●	●
G Option						
Blank	No options		●	●	●	●
M	Non-locking manual override	Note 6	●	●	●	●
M7	Manual override with off function	Note 6	●	●	●	●
H	With check valve	Note 7	●	●	●	●
K	External pilot		●	●		
A	Ozone/coolant proof		●	●	●	●
F	A/B port filter integrated	Note 8	●	●	●	●
Z1	Supply spacer	Note 10	●	●		
Z3	Exhaust spacer	Note 10	●	●		
H Mount type						
Blank	Direct mount type		●	●		
D	DIN rail mount type		●			
I Station no.						
2 to 18	2 stations to 18 stations	(Differs with the reduced wiring connection specifications. Check individual specifications on page 23.)	●	●		
J Voltage						
1	AC100V (rectified bridge integrated)		●	●	●	●
3	DC24V		●	●	●	●
4	DC12V		●	●	●	●

is not available.

[Reduced wiring connection table]

A Model no.				
Manifold		Discrete block with solenoid valve		Discrete solenoid valve
				
M	M	N	N	W
W	W	W	W	4
4	4	4	4	G
G	G	G	G	B
B	Z	B	Z	2
2	2	2	2	2

E Reduced wiring(light and surge suppressor provided as standard)					
T10	Common gland (M3 screw) Left	●	●		
T20	Multi connector Left Note 4	●	●		
T30	D sub-connector Left Note 4	●	●		
T51	20 pin flat cable connector w/o power supply terminal Left Note 4	●	●		
T53	26 pin flat cable connector w/o power supply terminal Left Note 4	●	●		

Note 4 : Multi-connector(T20)/D-sub connector(T30)/flat cable connector(T5*). specifications do not have AC100V options.

MW4GB^BZ2-T8 Series

How to order

Serial transmission

● Manifold model no.

MW4GB2 1 0 - C8 - T8G1 W H D - 5 - 3

MW4GZ2 1 0 - C8 - T8G1 W H - 5 - 3

● Discrete valve block with solenoid valve

NW4GB2 1 0 - C8 - W H - 3

NW4GZ2 1 0 - C8 - W H - 3

● Discrete solenoid valve (for NW4GB2 and NW4GZ2)

W4GB2 1 9 - 0 - H - 3

A Model no.

E Solenoid position

H Mount type

C Port size
Note 1
Note 2

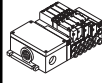


I Station no.

D Electric connection

E Reduced wiring
Refer to page 3 for the circuit diagram of the solenoid valve.

F Terminal/connector pin array

G Option

A Model no.				
Manifold	Discrete block with solenoid valve		Discrete solenoid valve	
				
MW4GB2	MW4GZ2	NW4GB2	NW4GZ2	W4GB2

Symbol	Descriptions				
B Solenoid position					
1	2-position single solenoid	●	●	●	●
2	2-position double solenoid	●	●	●	●
3	3-position all ports closed	●	●	●	●
4	3-position ABR connection	●	●	●	●
5	3-position PAB connection	●	●	●	●
8	Mix manifold	●	●		
C Port size (A/B port)					
C4	φ 4 push-in fitting	●	●	●	●
C6	φ 6 push-in fitting	●	●	●	●
C8	φ 8 push-in fitting	●	●	●	●
CL6	φ 6 push-in fitting L(upward)	●		●	
CL8	φ 8 push-in fitting L(upward)	●		●	
CX	Push-in fitting mix	●	●		
Single plug		A port		B port	
C4NC	φ 4 push-in fitting	Plug		●	●
C6NC	φ 6 push-in fitting			●	●
C8NC	φ 8 push-in fitting			●	●
C4NO	Plug		φ 4 push-in fitting	●	●
C6NO			φ 6 push-in fitting	●	●
C8NO			φ 8 push-in fitting	●	●
CL6NC	φ 6 push-in fitting L(upward)	Plug		●	
CL8NC	φ 8 push-in fitting L(upward)			●	
CL6NO	Plug		φ 6 push-in fitting L(upward)	●	●
CL8NO			φ 8 push-in fitting L(upward)	●	●
D Electric connection					
Blank	Connector relay circuit board specifications for DC.			●	●
E Reduced wiring(light and surge suppressor provided as standard)					
Refer to the next page for reduced wiring.					
F Terminal and connector pin array					
Blank	Standard wiring	Note 3	●	●	●
W	double wiring	Note 3	●	●	●
G Option					
Blank	No options		●	●	●
M	Non-locking manual override	Note 4	●	●	●
M7	Manual override with off function	Note 4	●	●	●
H	With check valve	Note 5	●	●	●
K	External pilot		●	●	
A	Ozone/coolant proof		●	●	●
F	A/B port filter integrated	Note 6	●	●	●
Y**	I/O block (Specify I/O block combination number in ** according to table 1 (I/O block combination table).)	Note 8	●	●	
Z1	Supply spacer	Note 10	●	●	
Z3	Exhaust spacer	Note 10	●	●	
H Mount type					
Blank	Direct mount type		●	●	
D	DIN rail mount type		●		
I Station no.					
2	2 stations	(Differs with the reduced wiring connection specifications. Check individual specifications on page 23.)	●	●	
to	to				
16	16 stations				
J Voltage					
3	DC24V	Note 9	●	●	●

⚠ Cautions for model No. selection

Fill out " manifold specifications ".

Note 1 A or B port plug specifications (*NC/*NO) are available only for the 2-position single.

Specify P/R port size with the supply and exhaust block.

Note 2 CL* push-in joint L (upward) is used only for the single/double solenoid manifold.

The A port is a long elbow and the B port a short elbow.

A/B port sizes do not differ for push-in joint L (upward) mix (CX). Short elbow will be installed if CL*NC/NO is selected.

Note 3 Blank ... Wired based on the type of valve used.

W ... Wiring for double solenoid will apply regardless of type of valve mounted.

W does not need to be designated when the single solenoid is not mounted.

Note 4 The non-locking manual override (M) and manual override with OFF function (M7) cannot be selected simultaneously.

Note 5 The check valve specifications (H) are not available for the 3-position all port block or P/A/B connection.

Refer to Page 91 for details on the check valve.

Note 6 Port P has an integrated filter.

Note 7 The discrete solenoid valve used on the discrete valve block with solenoid valve NW4GZ2 is the same one used on W4GB2*9.

Note 8 Select the I/O format (sink/source) and the power supply (slave/external)

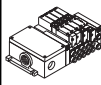


with the manifold specification sheet on pages 98 and 99.

Note 9 100 VAC and 12 VDC settings are not available for the serial transmission connection specifications.

Note 10 Specify the spacer mounting location and quantity in manifold specifications.

Refer to page 59 to 60 for details.

[Reduced wiring connection table]

A Model no.				
Manifold		Discrete block with solenoid valve		Discrete solenoid valve
				
MW4GB2	MW4GZ2	NW4GB2	NW4GZ2	W4GB2

E Reduced wiring(light and surge suppressor provided as standard)						
T8G1	Serial transmission CC-Link	16 points output	●	●		
T8G2		32 points output	●	●		
T8G7		16 points input/16 points output	●	●		
T8D1	Serial transmission DeviceNet	16 points output	●	●		
T8D2		32 points output	●	●		
T8D7		16 points input/16 points output	●	●		
T8MA	Serial transmission	4 points input/4 points output	●	●		
T8M6	AS-i	8 points input/8 points output	●	●		

Table 1 (I/O block combination)

Symbol	Layout and station no. of I/O block.					
Y10						IN
Y20					IN	IN
Y30				IN	IN	IN
Y40			IN	IN	IN	IN
Y01						OUT
Y02					OUT	OUT
Y03				OUT	OUT	OUT
Y04			OUT	OUT	OUT	OUT
Y11					OUT	IN
Y21				OUT	IN	IN
Y31			OUT	IN	IN	IN
Y41		OUT	IN	IN	IN	IN
Y12				OUT	OUT	IN
Y22			OUT	OUT	IN	IN
Y32		OUT	OUT	IN	IN	IN
Y42	OUT	OUT	IN	IN	IN	IN

Transmission block side

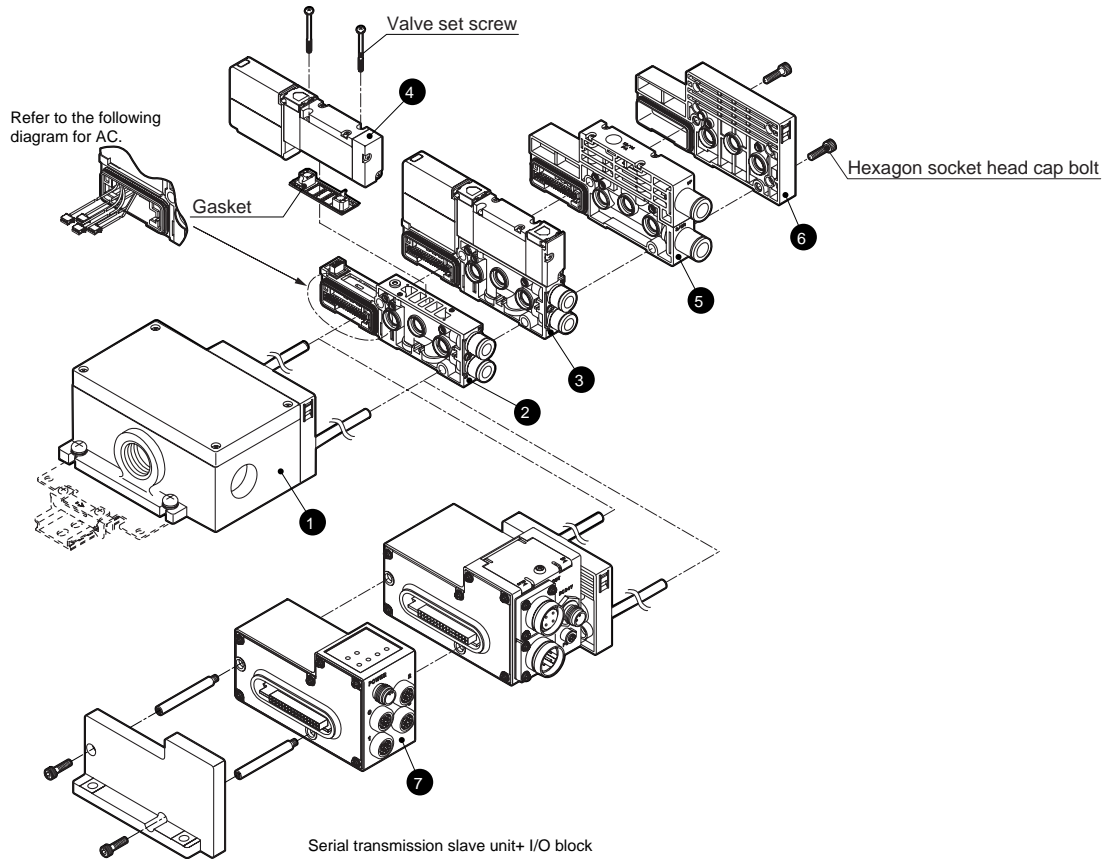
*1: How to read the table

E.g.) Y11 is a combination of an input block (4 points) and an output block (4points)

2: Refer to P.81 for details of I/O point number compatible with wiring method T8.

MW4G^B2-T1/2/3/5/8 Series

Manifold components explanation and parts list



Main parts list (refer to page 51 to 65 for details)

Model no.	Component name	Model no. (example)	Model no.	Component name	Model no. (example)
1	Wiring block	NW4GB2-T10	5	Supply and exhaust block	NW4G2-Q-10
2	Discrete valve block	NW4GB2-V1-C8	6	End block R	NW4G2-ER
3	Discrete valve block with solenoid valve	NW4GB220-C8-H-3	7	I/O block	NW4GB2-IN-N-B
4	Discrete solenoid valve	W4GB219-00-H-3			

Reduced wiring volume (DC)

NW4GB2

NW4GZ2

Block type		Weight	Block type		Weight (g)
Valve block with solenoid valve	NW4GB210	177	Valve block with solenoid valve	NW4GZ210	177
	NW4GB220	193		NW4GZ220	192
	NW4GB2 $\frac{3}{2}$ 0	200		NW4GZ2 $\frac{3}{2}$ 0	199
Valve block with masking plate	NW4GB2-MP $\frac{5}{8}$	113	Valve block with masking plate	NW4GZ2-MP $\frac{5}{8}$	112
Wiring block (serial transmission slave unit)	NW4GB2-T8*	650	Wiring block (serial transmission slave unit)	NW4GB2-T8*	430
I/O block	NW4GB2- $\frac{1}{2}$ T- $\frac{1}{2}$ - $\frac{1}{8}$	220	I/O block	NW4GB2- $\frac{1}{2}$ T- $\frac{1}{2}$ - $\frac{1}{8}$	220

Common

Block type		Weight	Block type		Weight (g)
Supply and exhaust block	NW4G2-Q*	137	Wiring block	NW4G2-T10	423
	NW4G2-QK*	140		NW4G2-T20	490
	NW4G2-QZ*	137		NW4G2-T30	370
	NW4G2-QKZ*	143		NW4G2-T5*	367
End block	NW4G2-ER	91			
	NW4G2-EXR	96			

Repair parts and related parts list

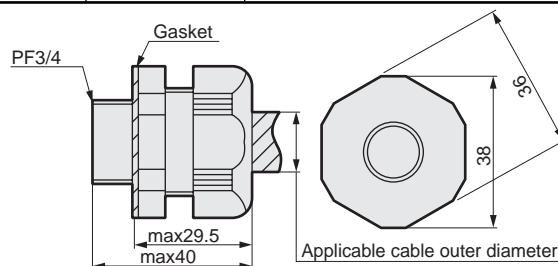
Model no.	Parts name	Model no.	
-	Push-in fitting and related parts	φ 4 straight	4G2-JOINT-C4
		φ 6 straight	4G2-JOINT-C6
		φ 8 straight	4G2-JOINT-C8
		φ 6L type	4G2-JOINT-CL6, CLL6
		φ 8L type	4G2-JOINT-CL8, CLL8
		Plug cartridge	4G2-JOINT-CPG
		Blanking plug	GWP4-B for φ 4, φ 6 for GWP6-B, φ 8 for GWP8-B

(reference value)
 Body tightening torque 4.0 to 4.5 N·m
 Cable clamp tightening torque 30 to 3.5N·m

Parts kit for Wiring block T10

● Cable clamp

Model no.	Applicable cable outer diameter	Descriptions
W4G-SCL-18A	φ 14.5~ 16.5	Use to provide dustproof and jet-proof protection for the cable.
W4G-SCL-18B	φ 16.5 to 18.5	



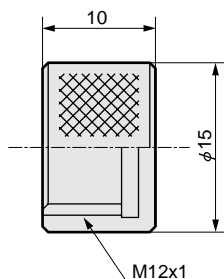
Parts for I/O block

● Water proof cap

Model no.	Descriptions
W4G-XSZ-11	If the same power supply is shared with serial transmission slave unit, this is used for jet proof protection of power supply connector.



(reference value)
 Tightening torque 0.4 to 0.5 N·m

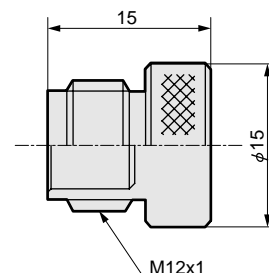


● Water proof plug

Model no.	Descriptions
W4G-XSZ-12	Used to provide jet-proof protection for idle signal connectors.



(reference value)
 Tightening torque 0.4 to 0.5 N·m

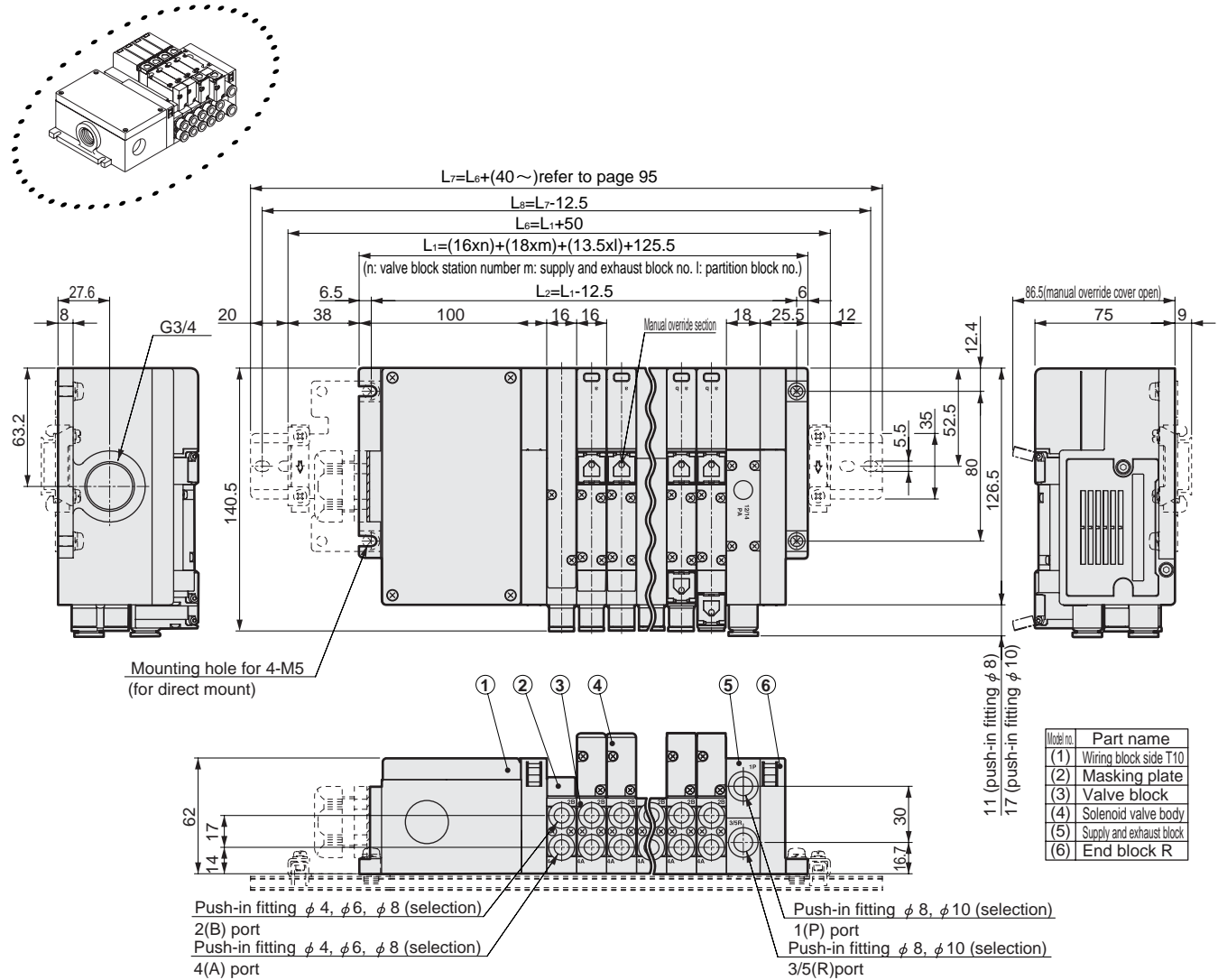


MW4GB^B2-T1/2/3/5/8 Series

Dimensions

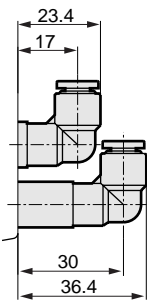
MW4GB2

- Common gland (T10)

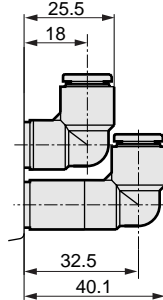


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)

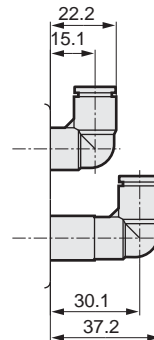


- $\phi 8$ (CL8)

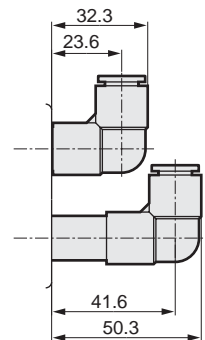


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)



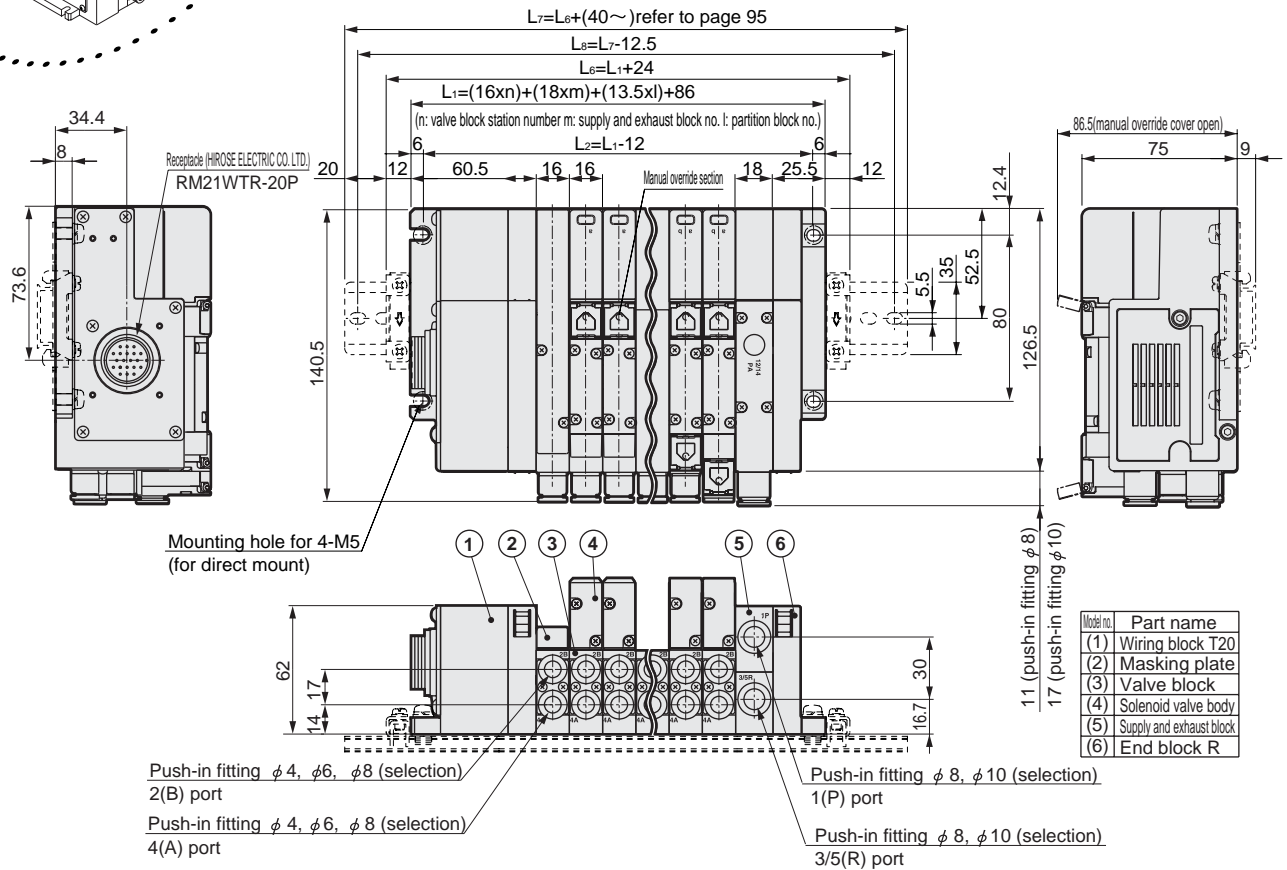
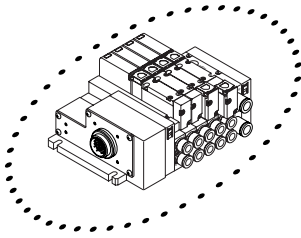
- $\phi 10$ (CL10)



Dimensions

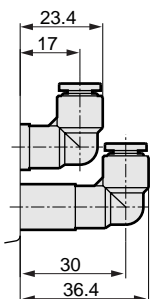
MW4GB2

- Multi-connector (T20)

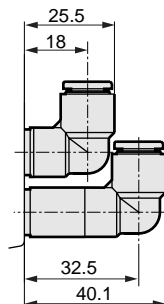


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)

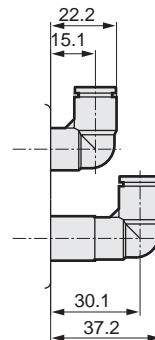


- $\phi 8$ (CL8)

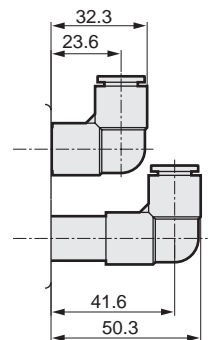


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)



- $\phi 10$ (CL10)

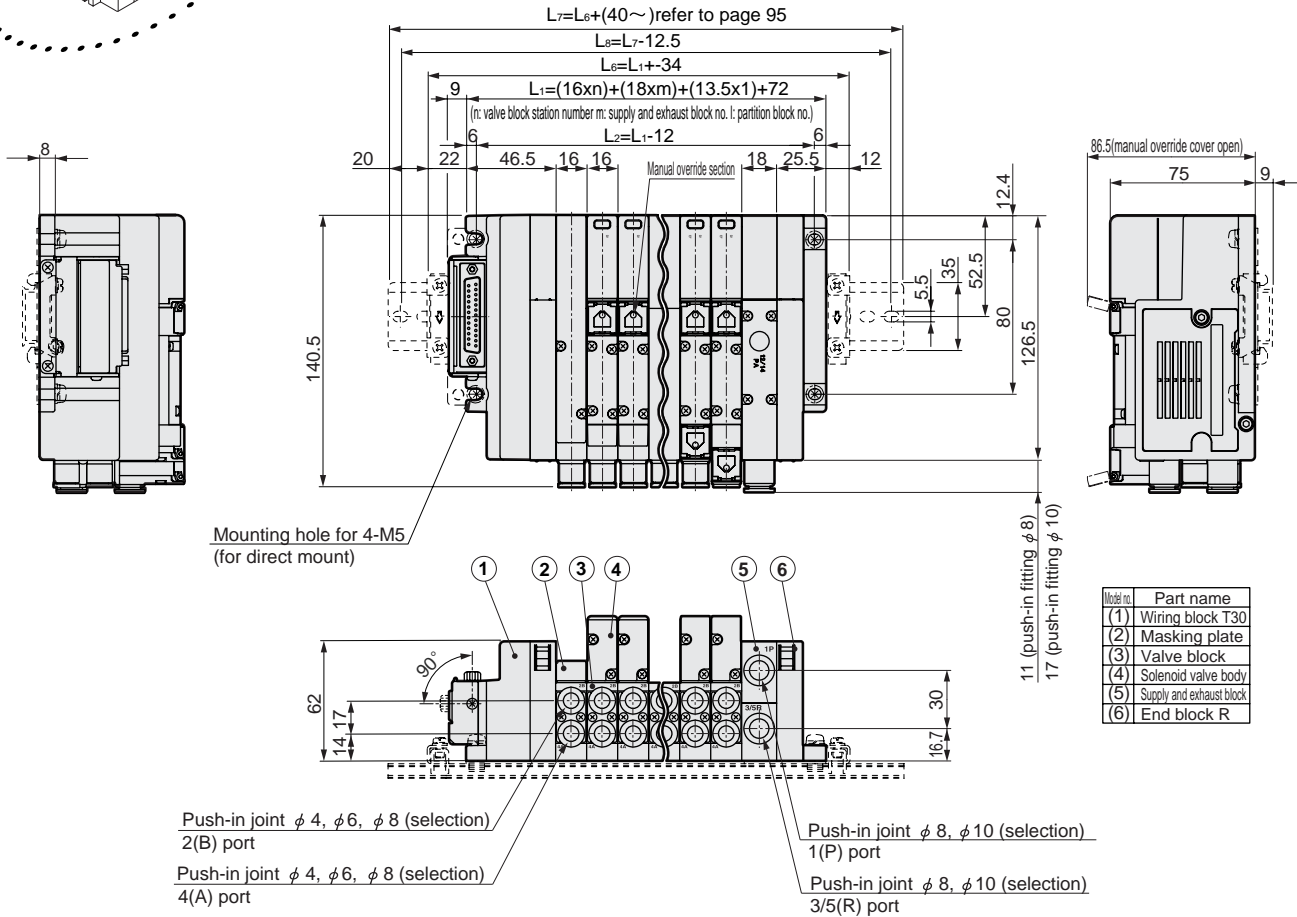
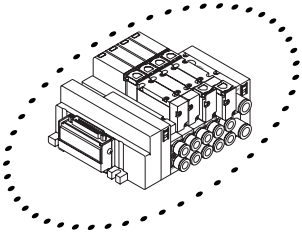


MW4G^B2-T1/2/3/5/8 Series

Dimensions

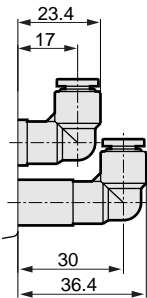
MW4GB2

- D sub-connector (T30)

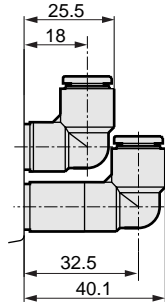


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)

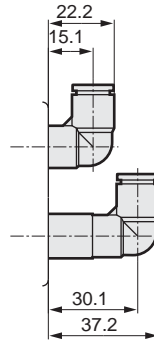


- $\phi 8$ (CL8)

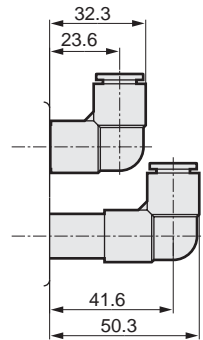


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)



- $\phi 10$ (CL10)

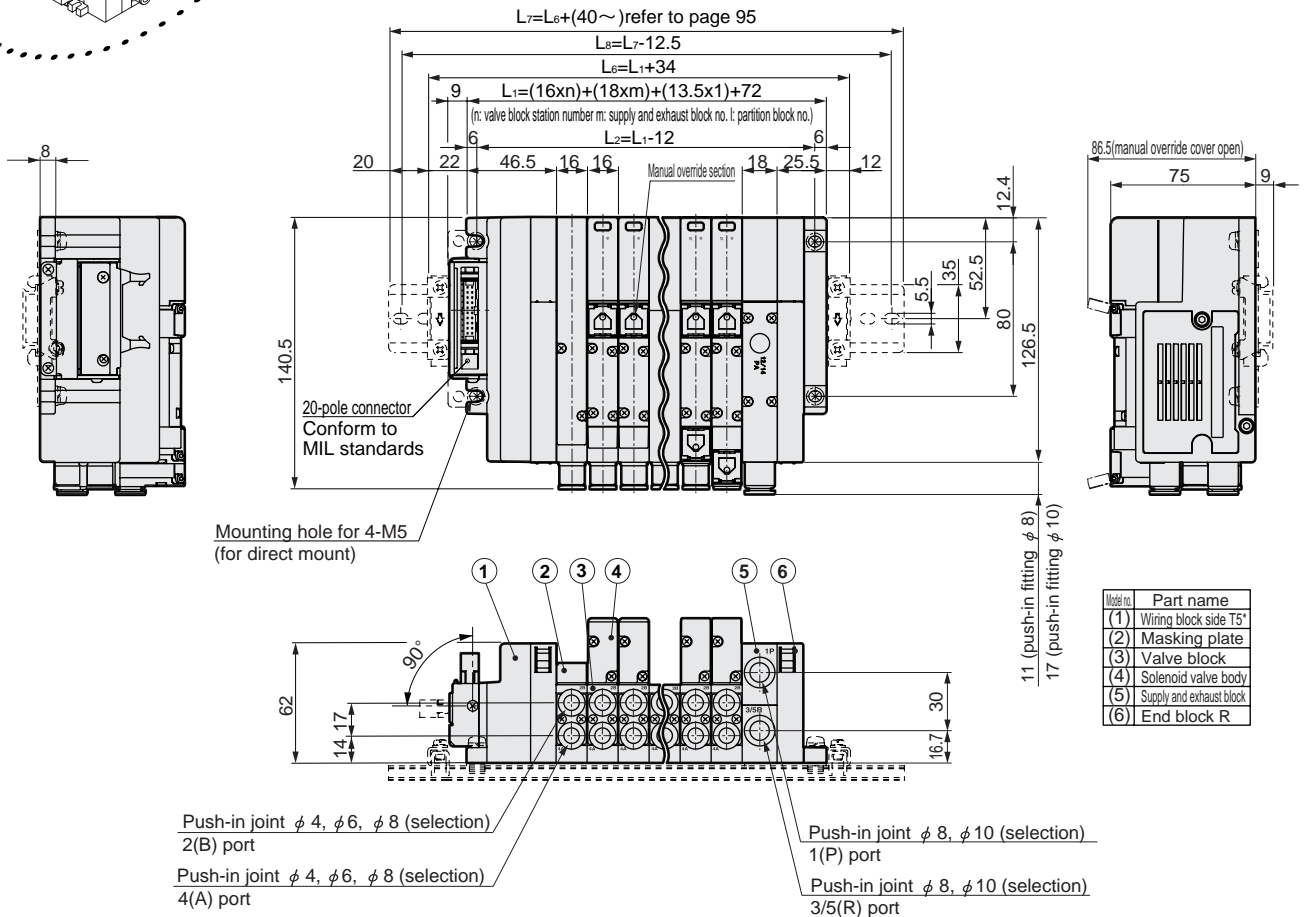
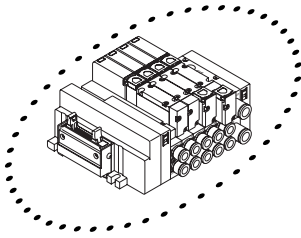


Dimensions

MW4GB2

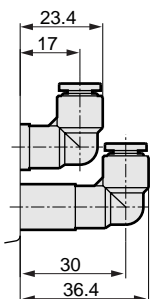
- Flat cable connector (T5*)

*This drawing is for T51.
T53 is available for the flat cable connector
Dimensions are same as T51.

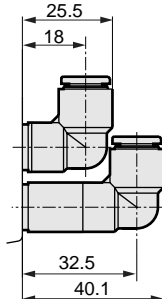


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)

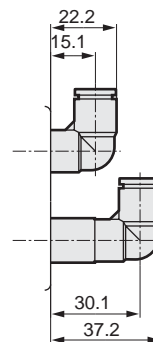


- $\phi 8$ (CL8)

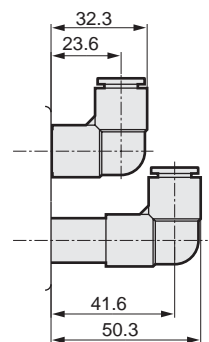


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)



- $\phi 10$ (CL10)

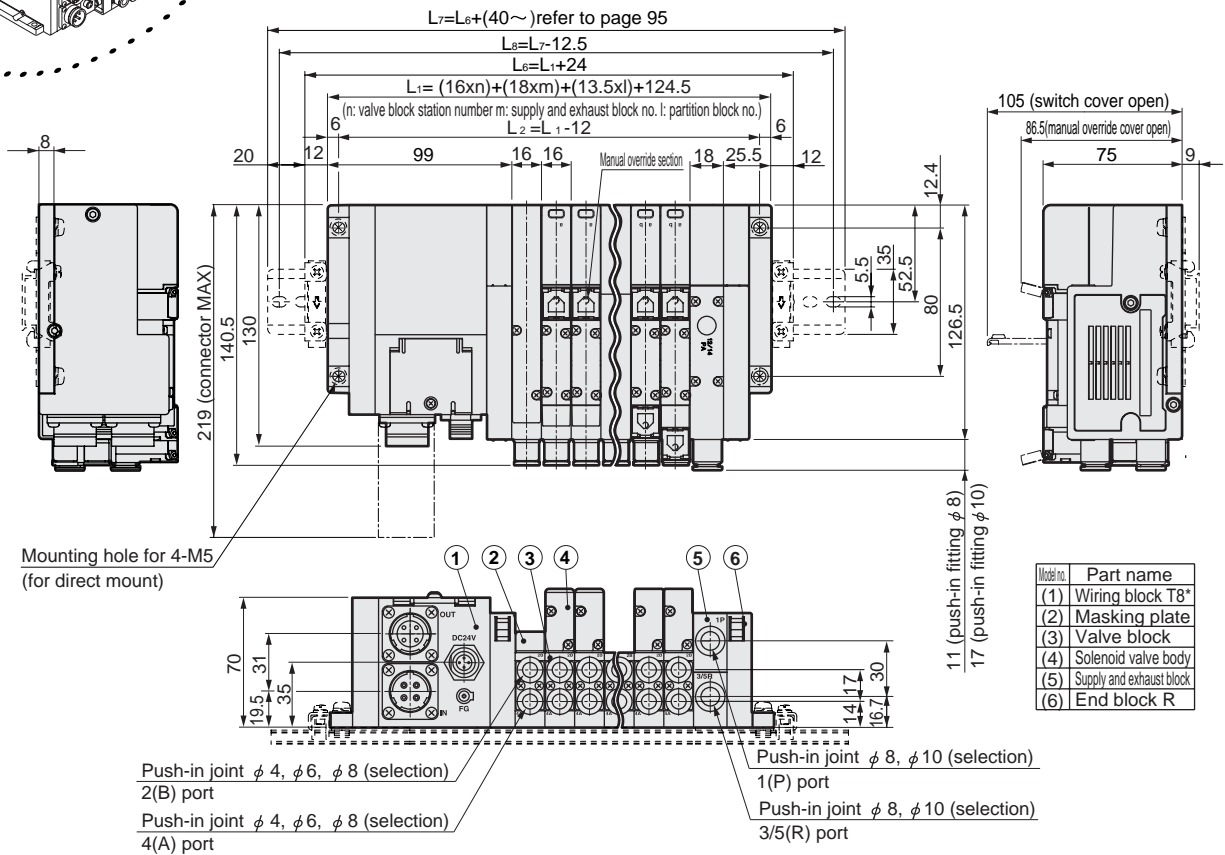
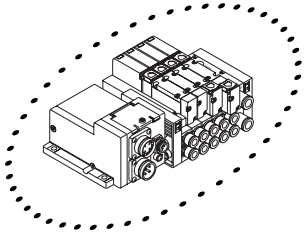


MW4GB^B2-T1/2/3/5/8 Series

Dimensions

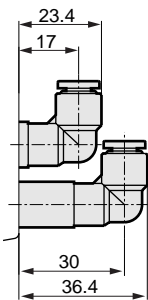
MW4GB2

- Serial transmission CC-Link (T8G*)

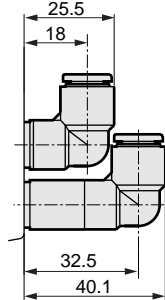


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)

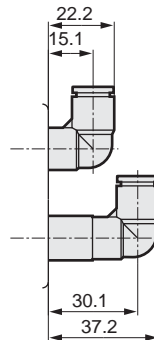


- $\phi 8$ (CL8)

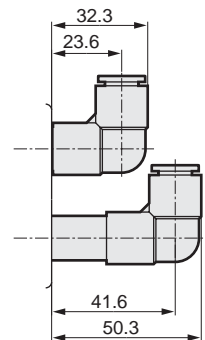


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)



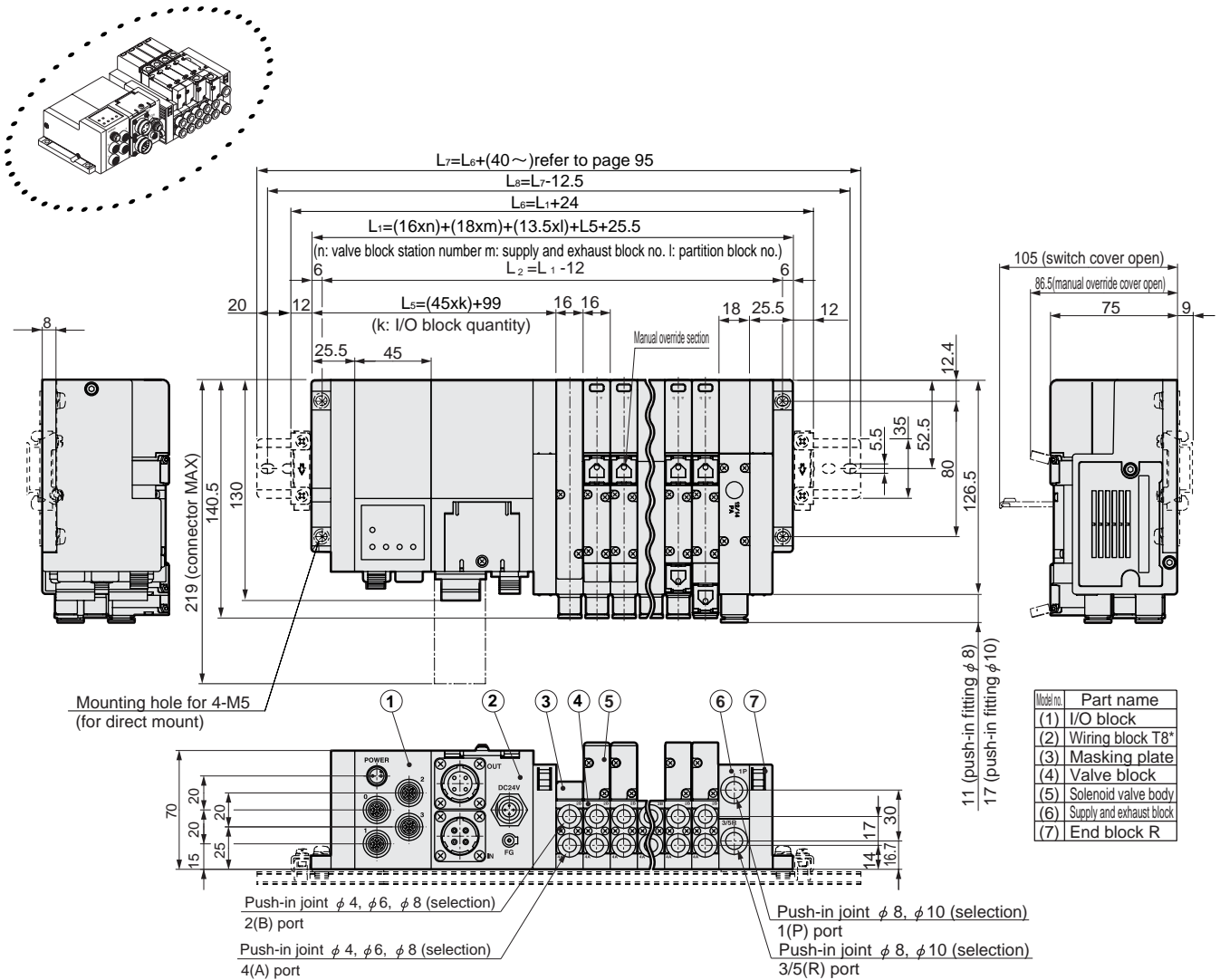
- $\phi 10$ (CL10)



Dimensions

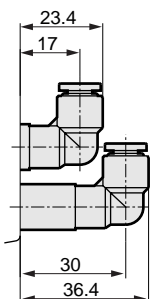
MW4GB2

- Serial transmission CC-Link (T8G*) + I/O block

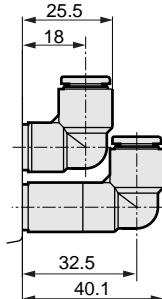


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)



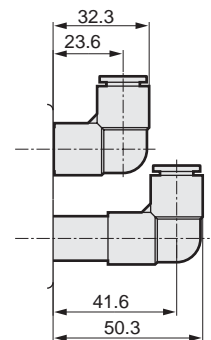
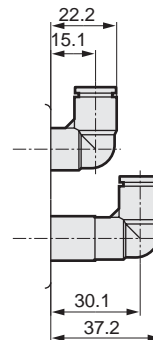
- $\phi 8$ (CL8)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)

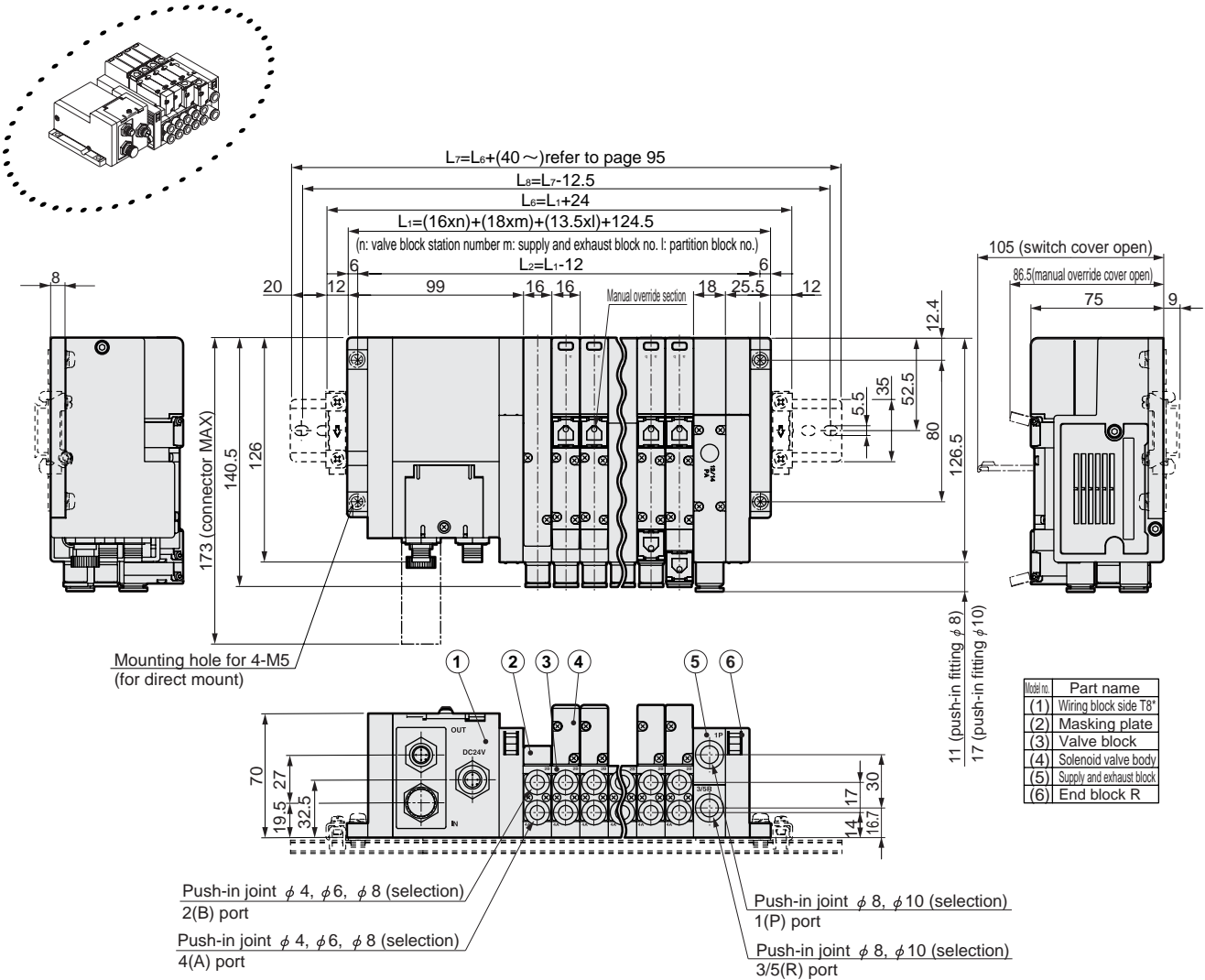


MW4GB^B2-T1/2/3/5/8 Series

Dimensions

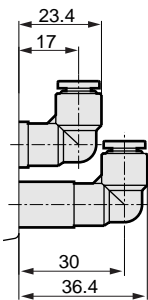
MW4GB2

- Serial transmission DeviceNet (T8D*)

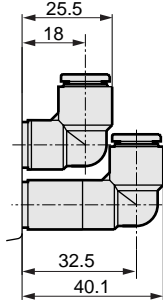


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)

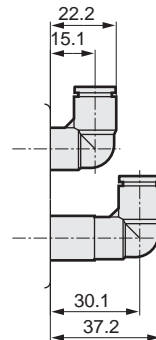


- $\phi 8$ (CL8)

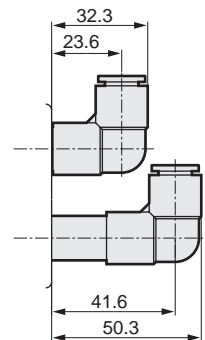


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)



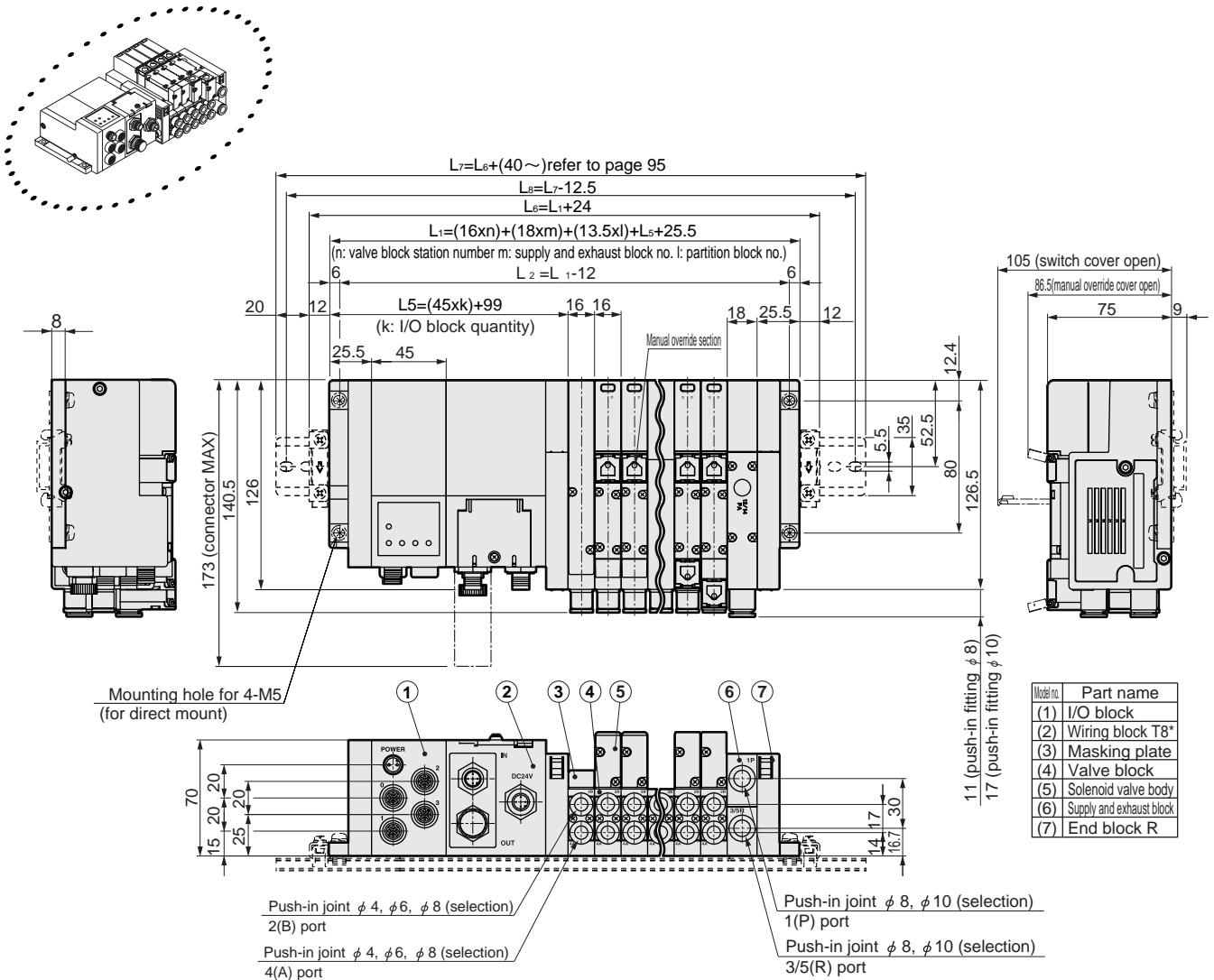
- $\phi 10$ (CL10)



Dimensions

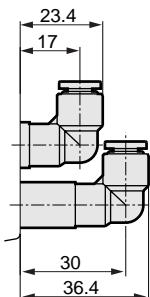
MW4GB2

- Serial transmission DeviceNet (T8D*) + I/O block

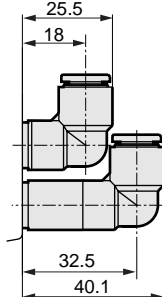


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)



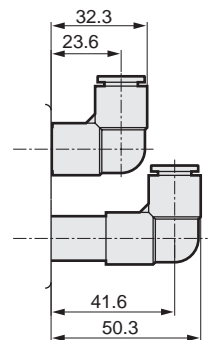
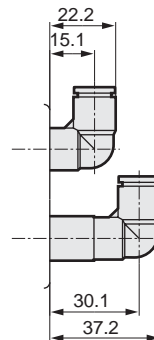
- $\phi 8$ (CL8)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)

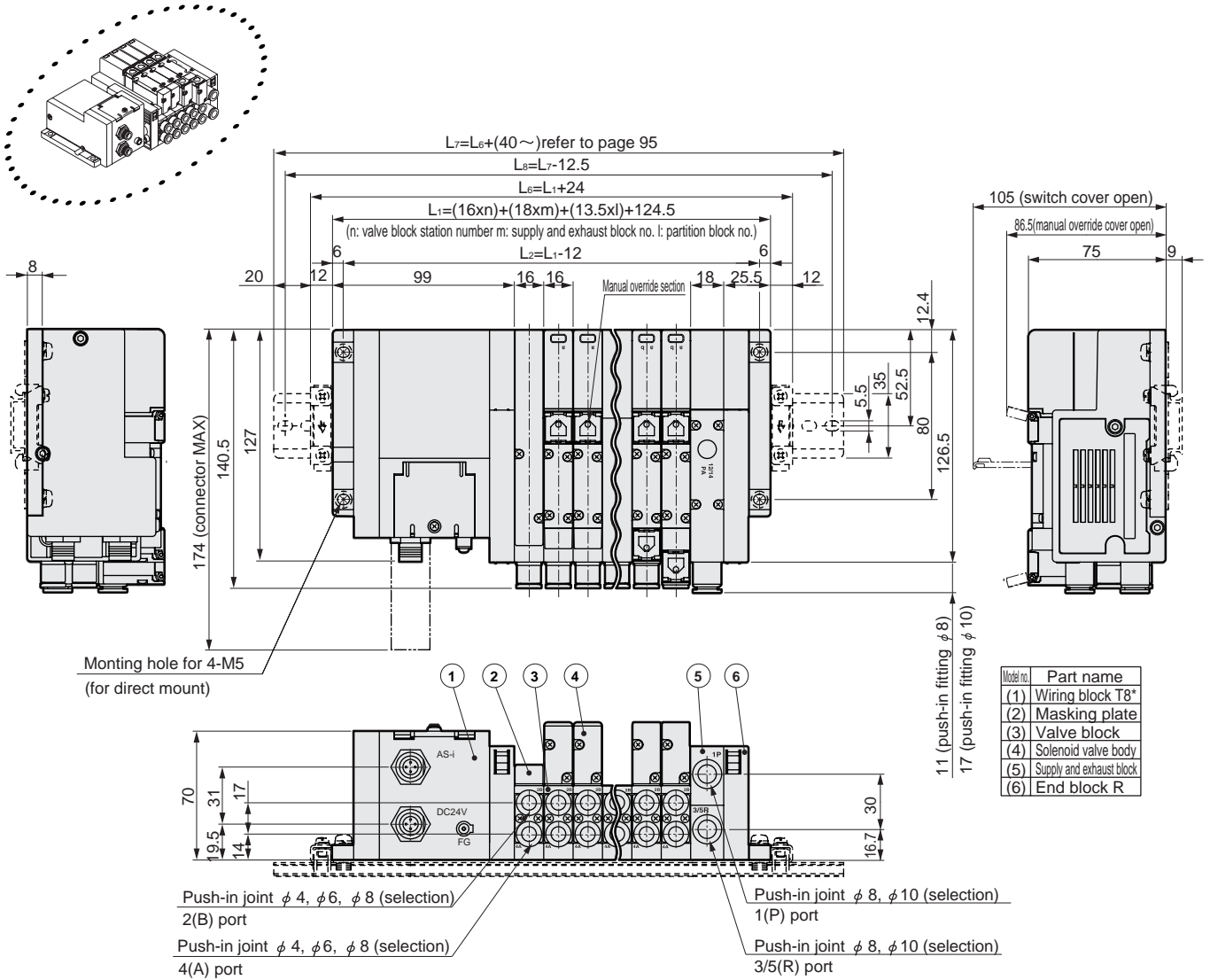


MW4GB^B2-T1/2/3/5/8 Series

Dimensions

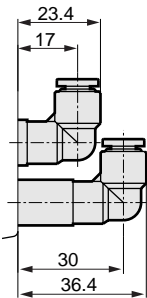
MW4GB2

- Serial transmission AS-i (T8M*)

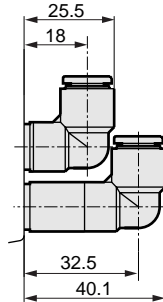


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)

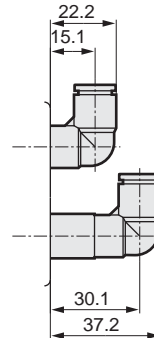


- $\phi 8$ (CL8)

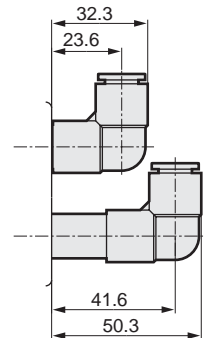


- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)



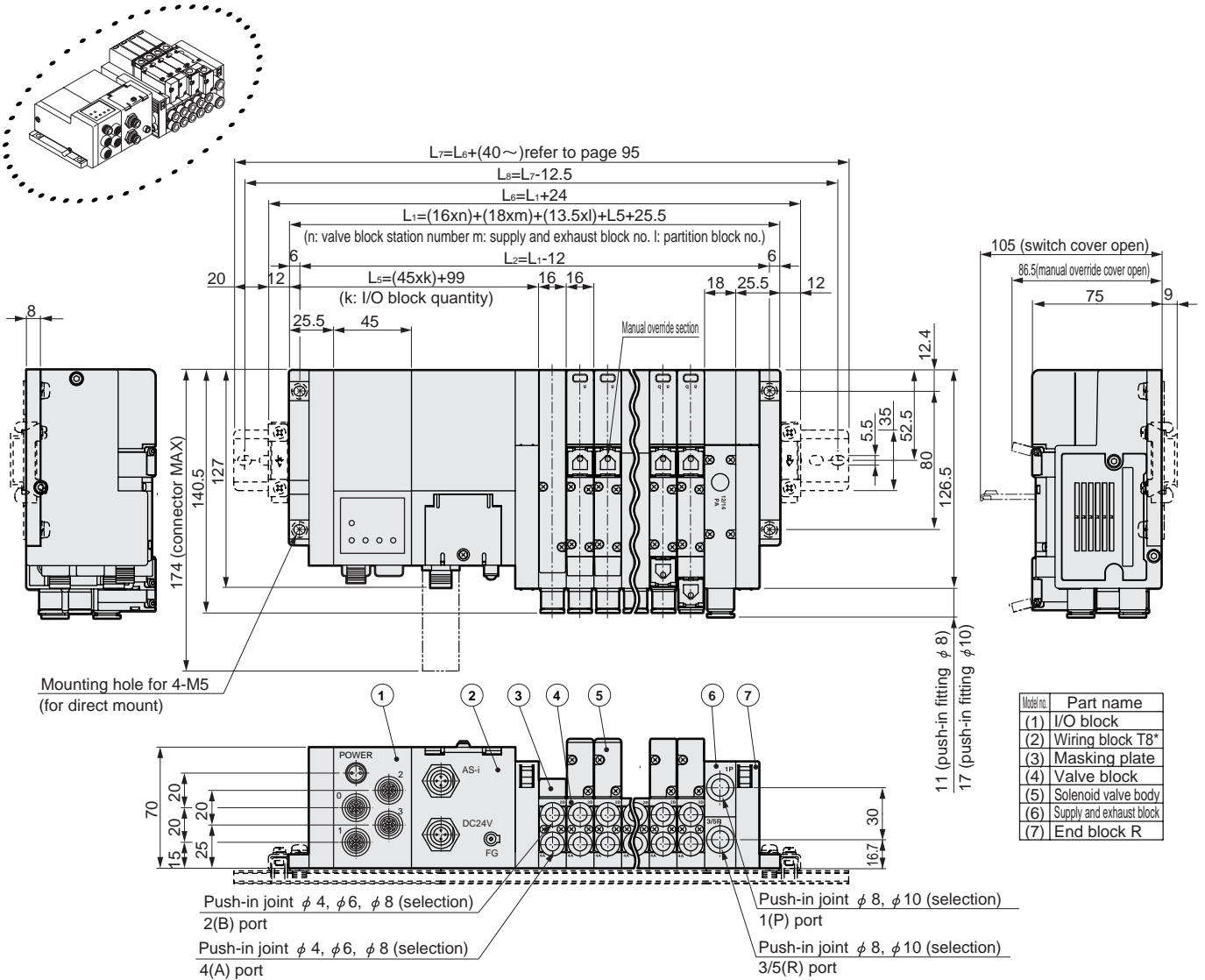
- $\phi 10$ (CL10)



Dimensions

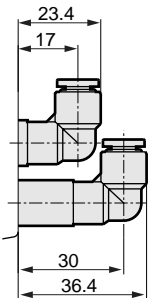
MW4GB2

- Serial transmission AS-i (T8M*) + I/O block

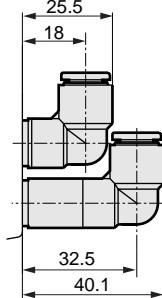


- Push-in fitting for valve block L type (upward)
Available for single solenoid and double solenoid manifolds only.
A port = long elbow, B port = short elbow

- $\phi 6$ (CL6)



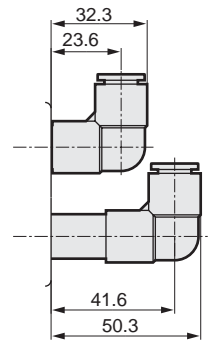
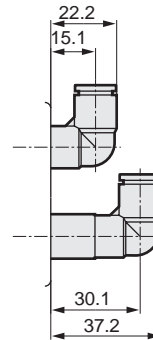
- $\phi 8$ (CL8)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)

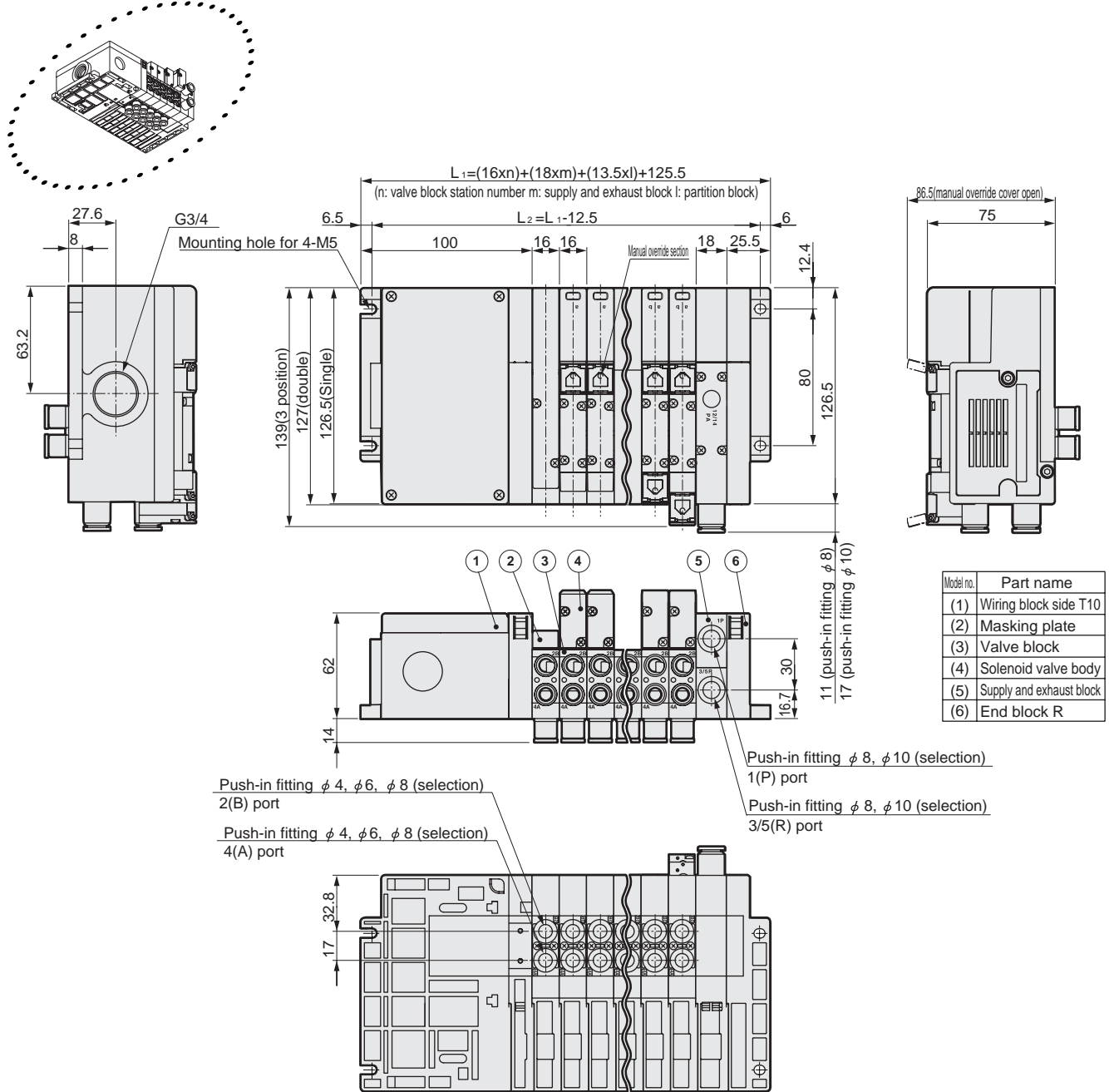


MW4G^B2-T1/2/3/5/8 Series

Dimensions

MW4G2

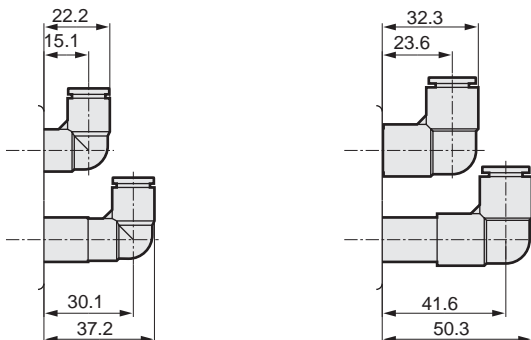
- Common gland (T10)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

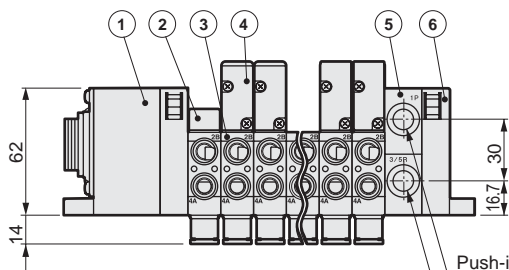
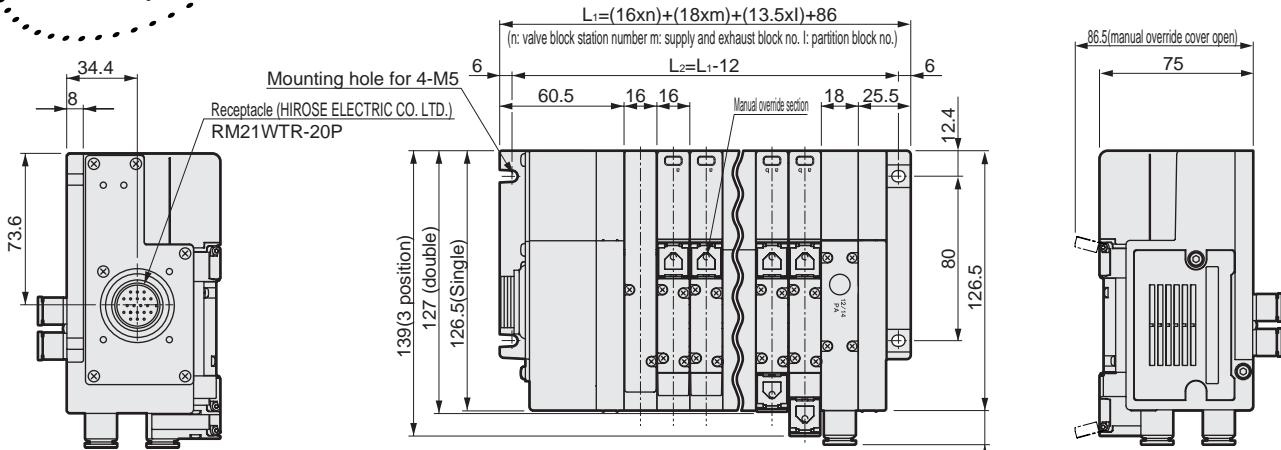
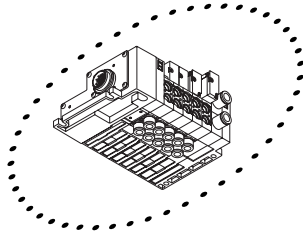
- $\phi 10$ (CL10)



Dimensions

MW4GZ2

- Multi-connector (T20)



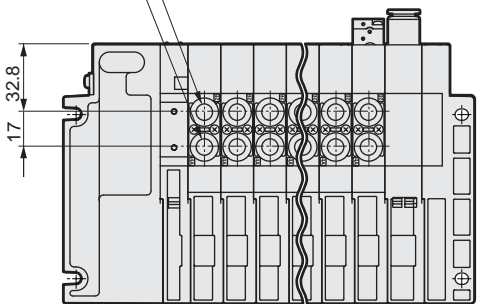
Model no.	Part name
(1)	Wiring block T20
(2)	Masking plate
(3)	Valve block
(4)	Solenoid valve body
(5)	Supply and exhaust block
(6)	End block R

Push-in joint ϕ 4, ϕ 6, ϕ 8 (selection)
2(B)port

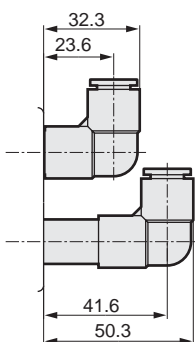
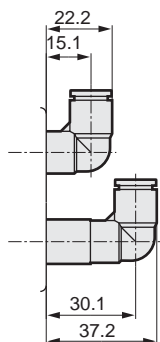
Push-in joint ϕ 4, ϕ 6, ϕ 8 (selection)
4(A)port

Push-in joint ϕ 8, ϕ 10 (selection)
1(P)port

Push-in joint ϕ 8, ϕ 10 (selection)
3/5(R)port



- Push-in fitting L type for supply and exhaust block (upward)
- ϕ 8 (CL8)
- ϕ 10 (CL10)



Reduced wiring

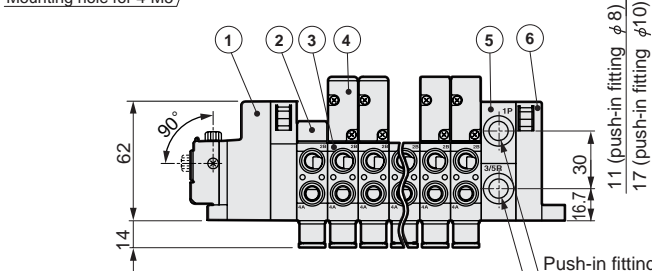
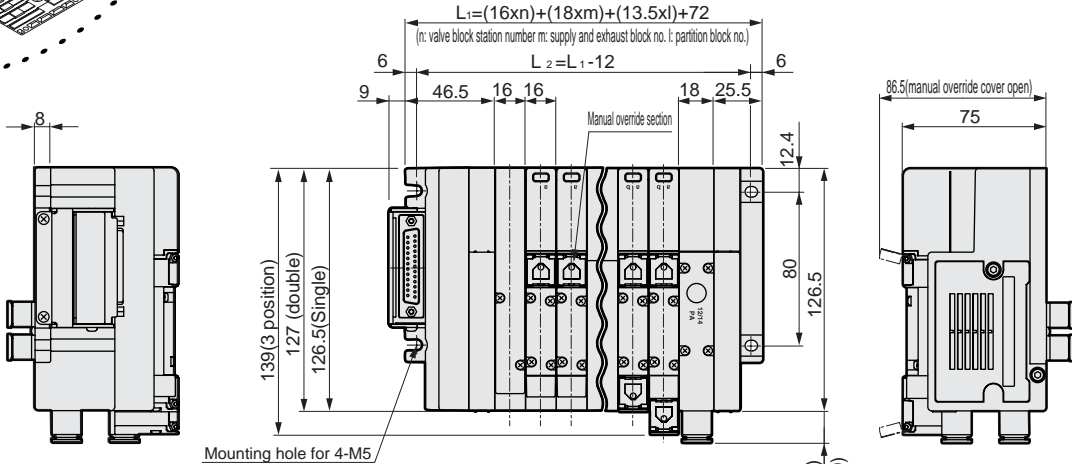
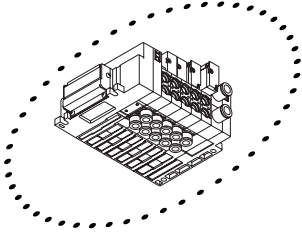
Base side porting and rear porting

MW4G^B2-T1/2/3/5/8 Series

Dimensions

MW4G22

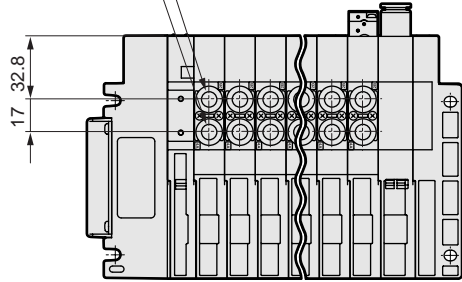
- D sub-connector (T30)



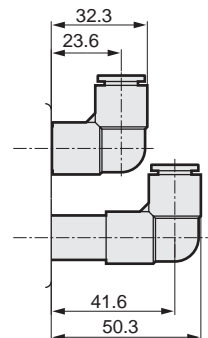
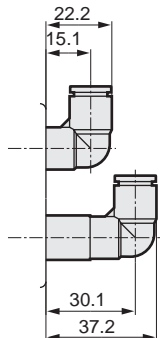
Model no.	Part name
(1)	Wiring block T30
(2)	Masking plate
(3)	Valve block
(4)	Solenoid valve body
(4)	Supply and exhaust block
(6)	End block R

Push-in fitting φ 4, φ 6, φ 8 (selection)
2(B) port
Push-in fitting φ 4, φ 6, φ 8 (selection)
4(A) port

Push-in fitting φ 8, φ 10 (selection)
1(P) port
Push-in fitting φ 8, φ 10 (selection)
3/5(R) port



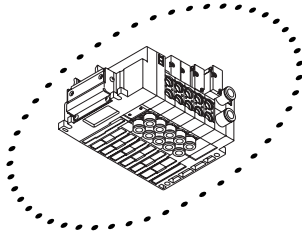
- Push-in fitting L type for supply and exhaust block (upward)
- φ 8 (CL8)
- φ 10 (CL10)



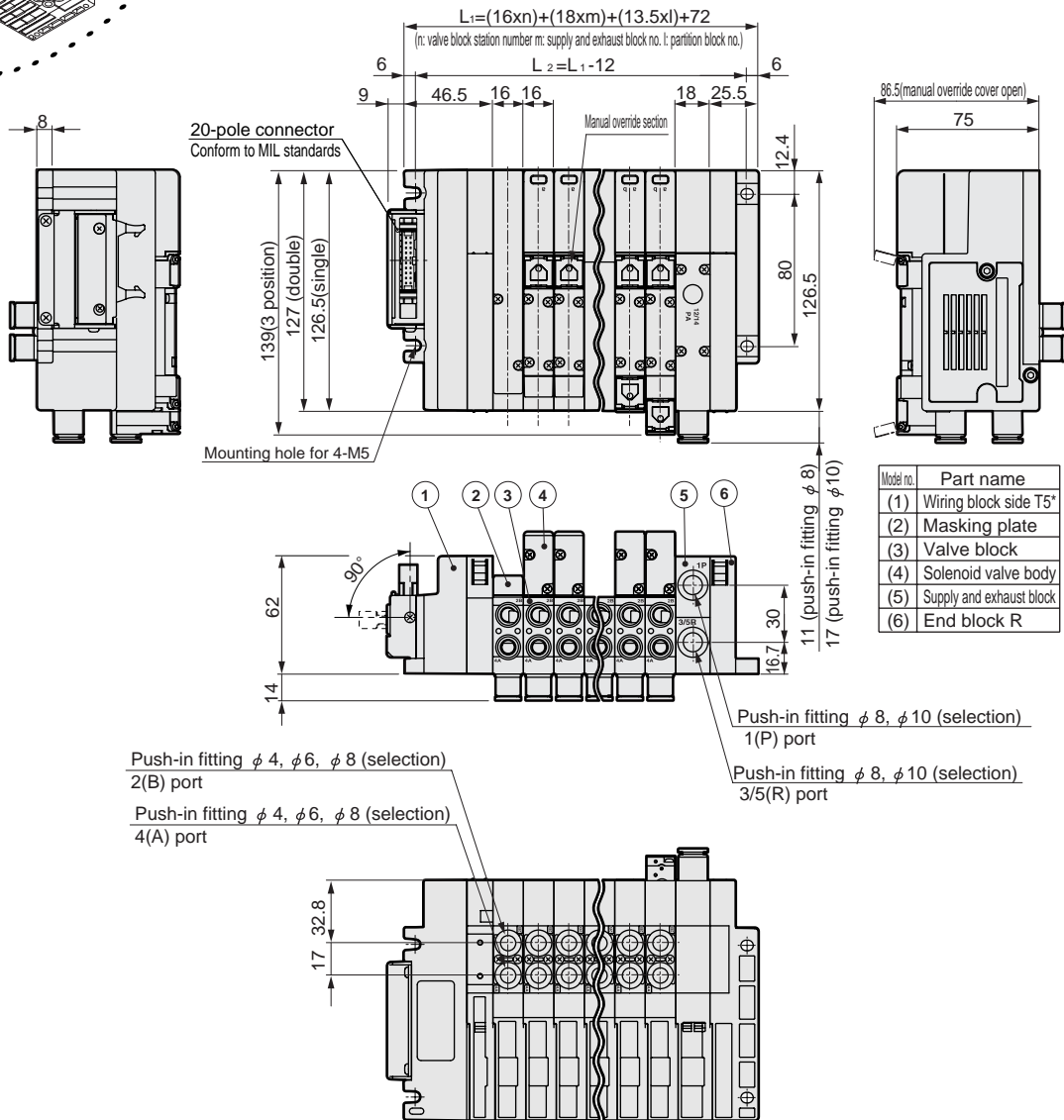
Dimensions

MW4GZ2

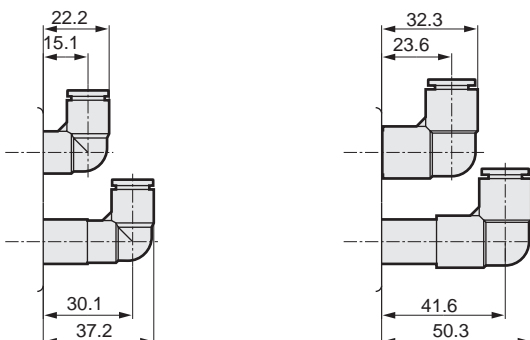
- Flat cable connector (T5*)



*This drawing indicates T51.
T53 is also available for flat cable connector.
Dimensions are same as T51.



- Push-in fitting L type for supply and exhaust block (upward)
- $\phi 8$ (CL8)
- $\phi 10$ (CL10)

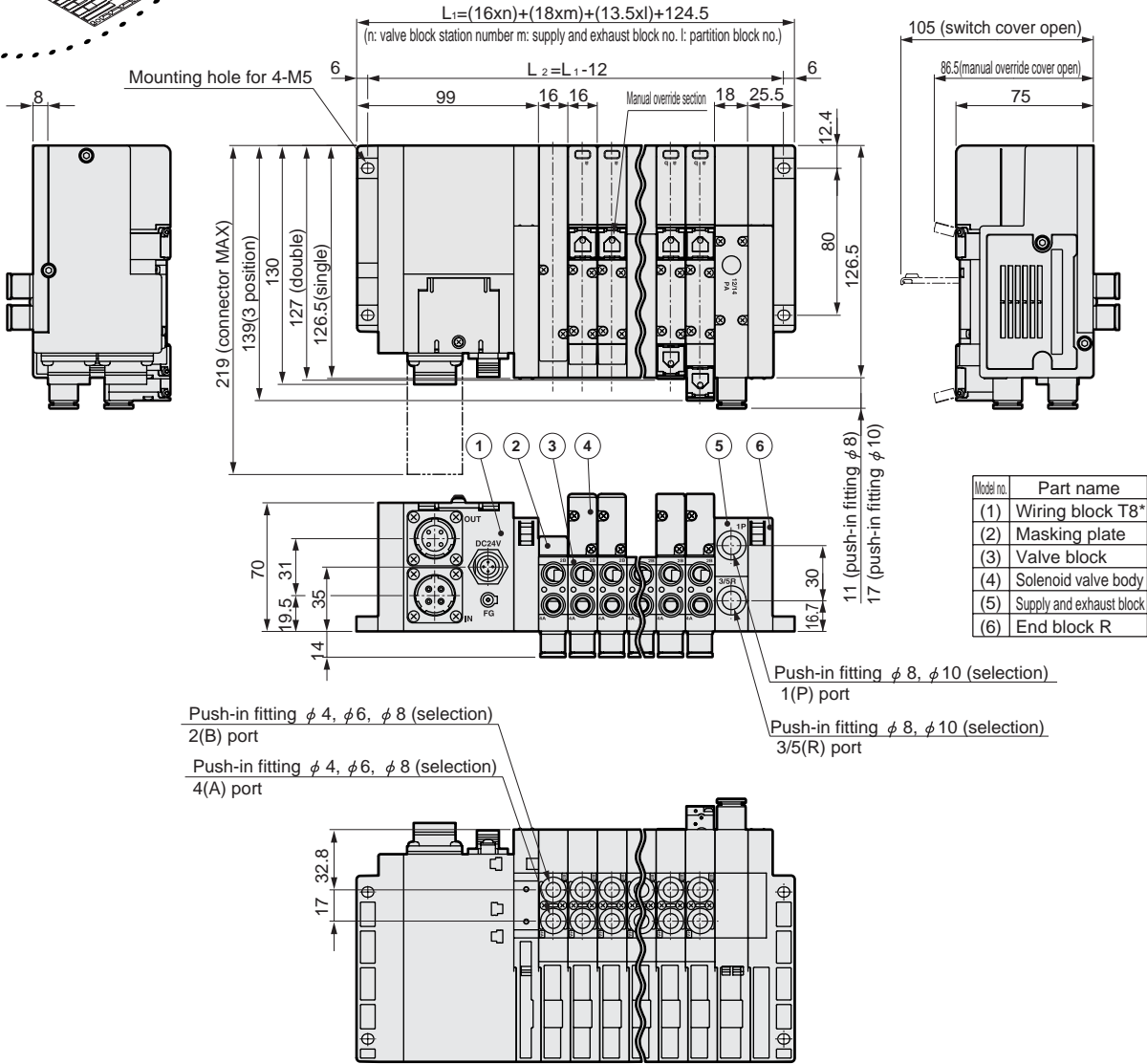
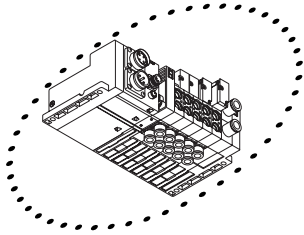


MW4G^B2-T1/2/3/5/8 Series

Dimensions

MW4G22

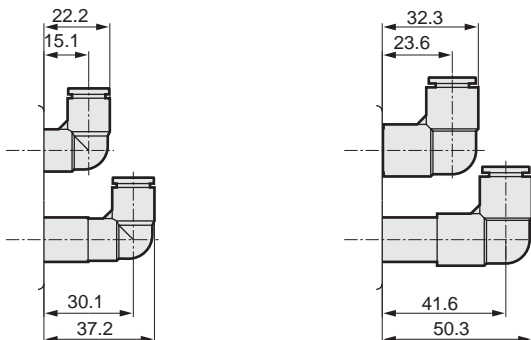
- Serial transmission CC-Link (T8G*)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

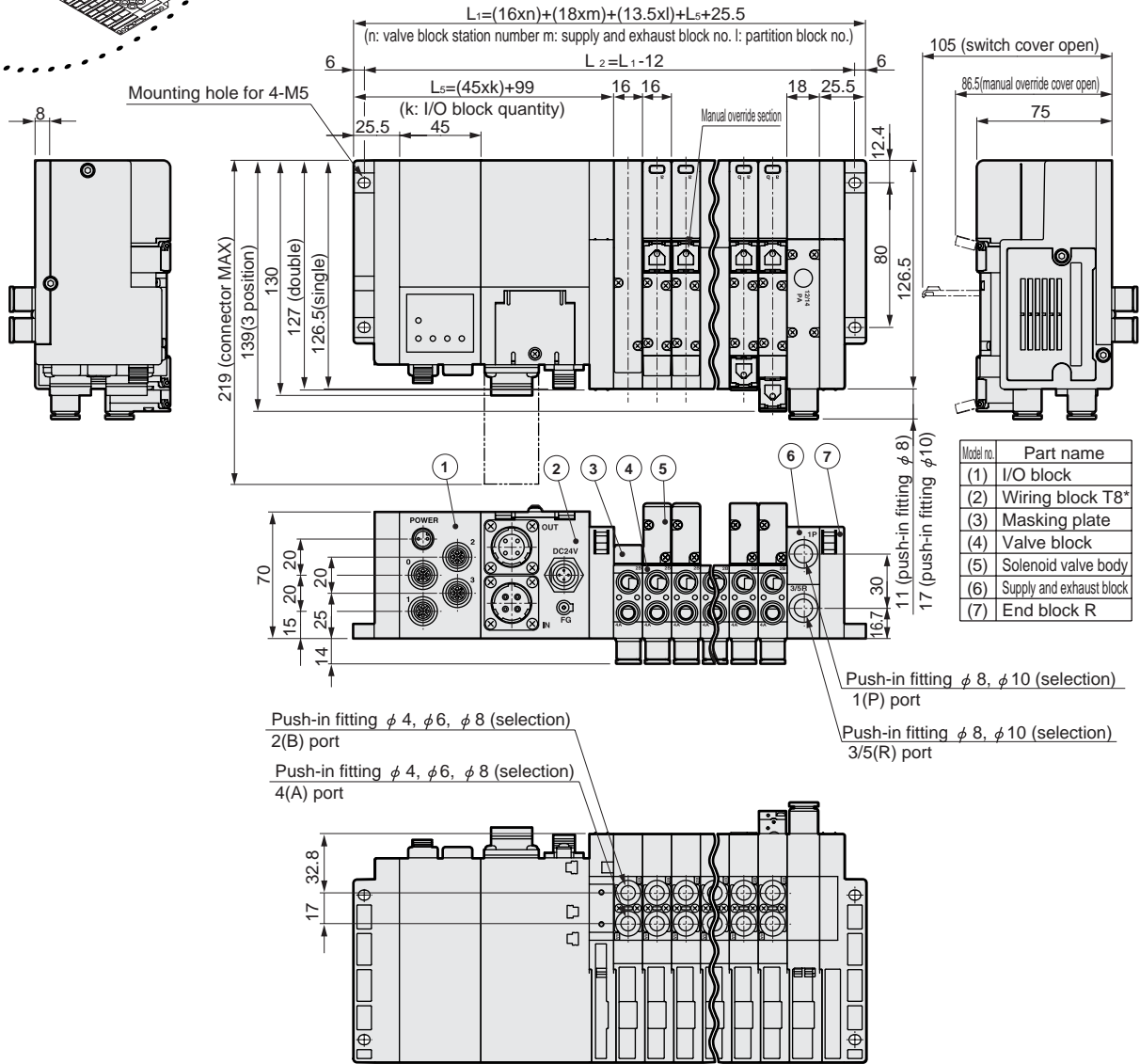
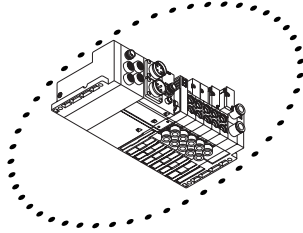
- $\phi 10$ (CL10)



Dimensions

MW4GZ2

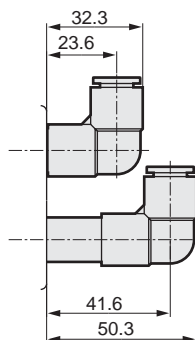
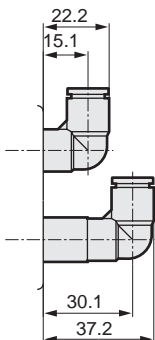
- Serial transmission CC-Link (T8G*) + I/O block



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)

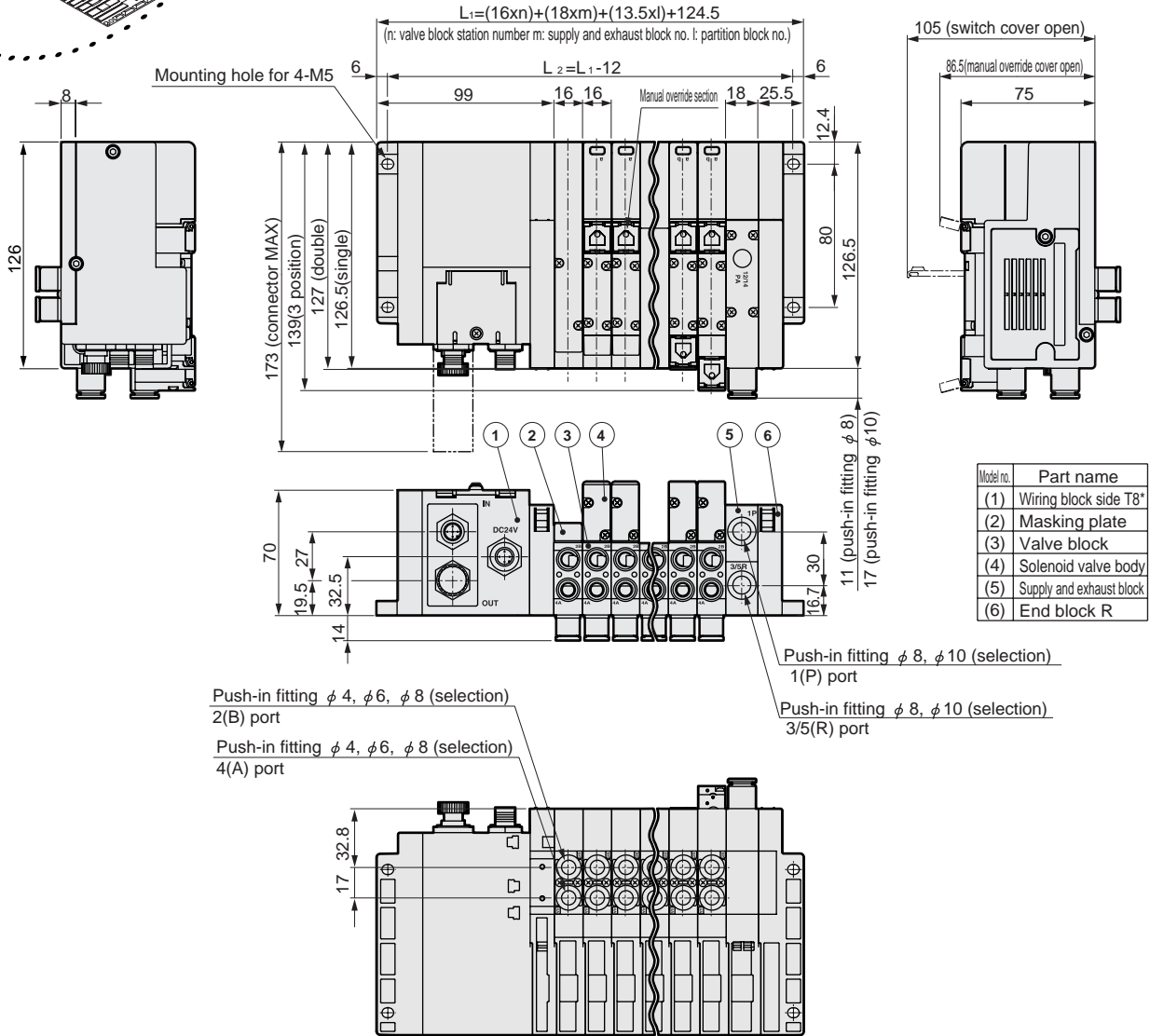
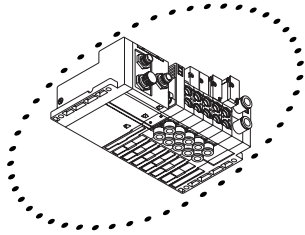


MW4G^BZ2-T1/2/3/5/8 Series

Dimensions

MW4GZ2

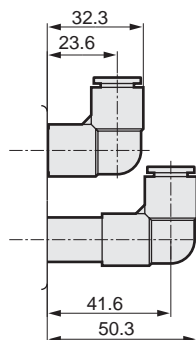
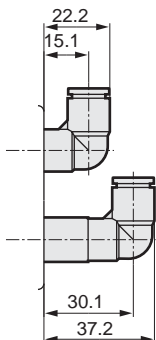
- Serial transmission DeviceNet(T8D*)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

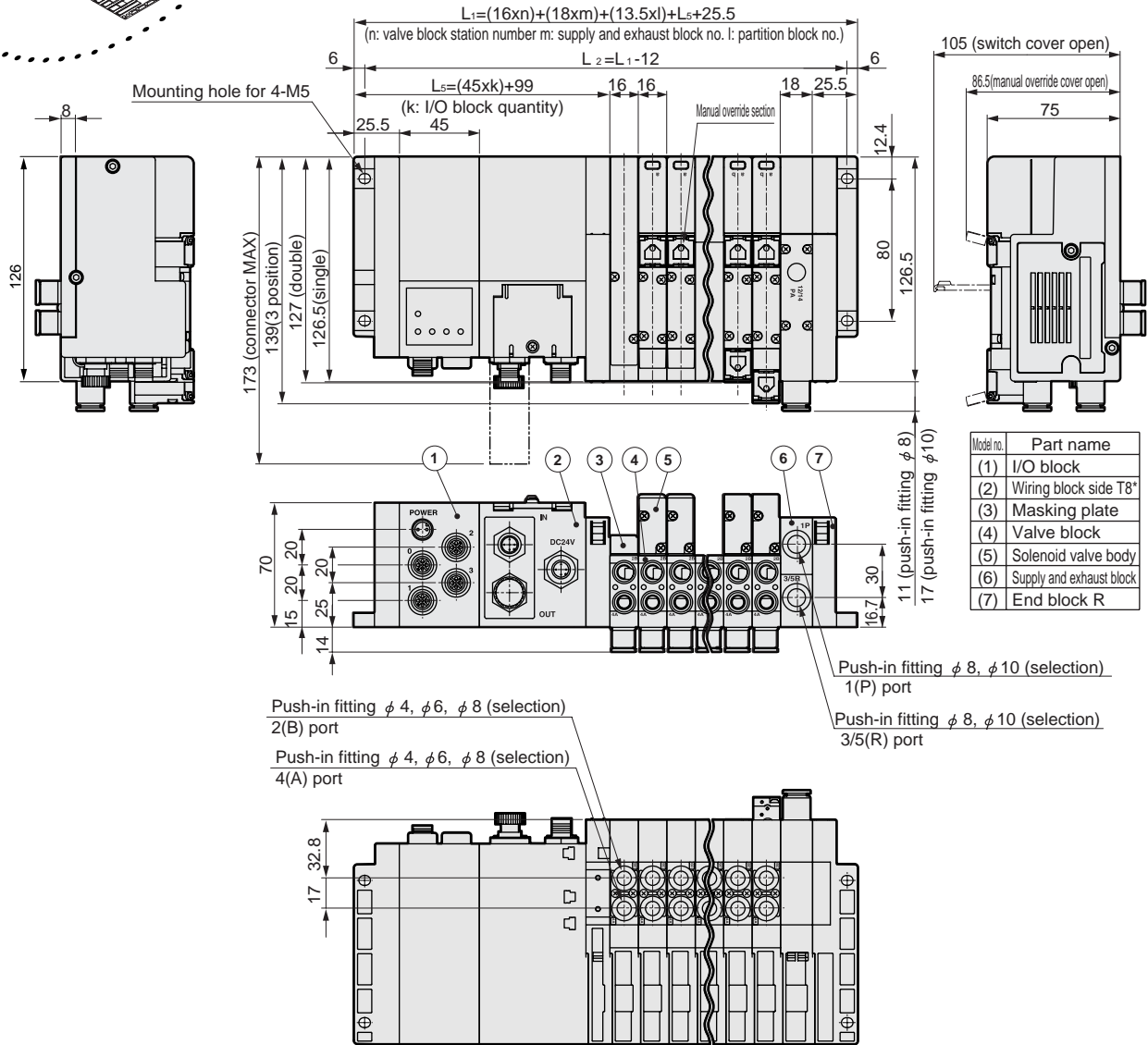
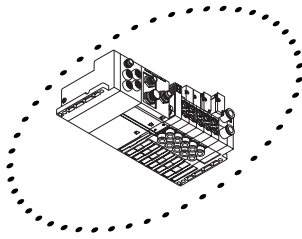
- $\phi 10$ (CL10)



Dimensions

MW4GZ2

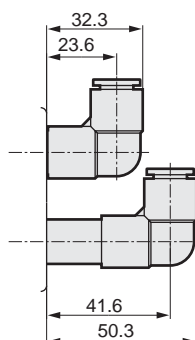
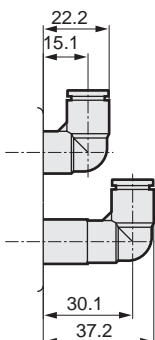
- Serial transmission DeviceNet(T8D*)+I/O block



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)

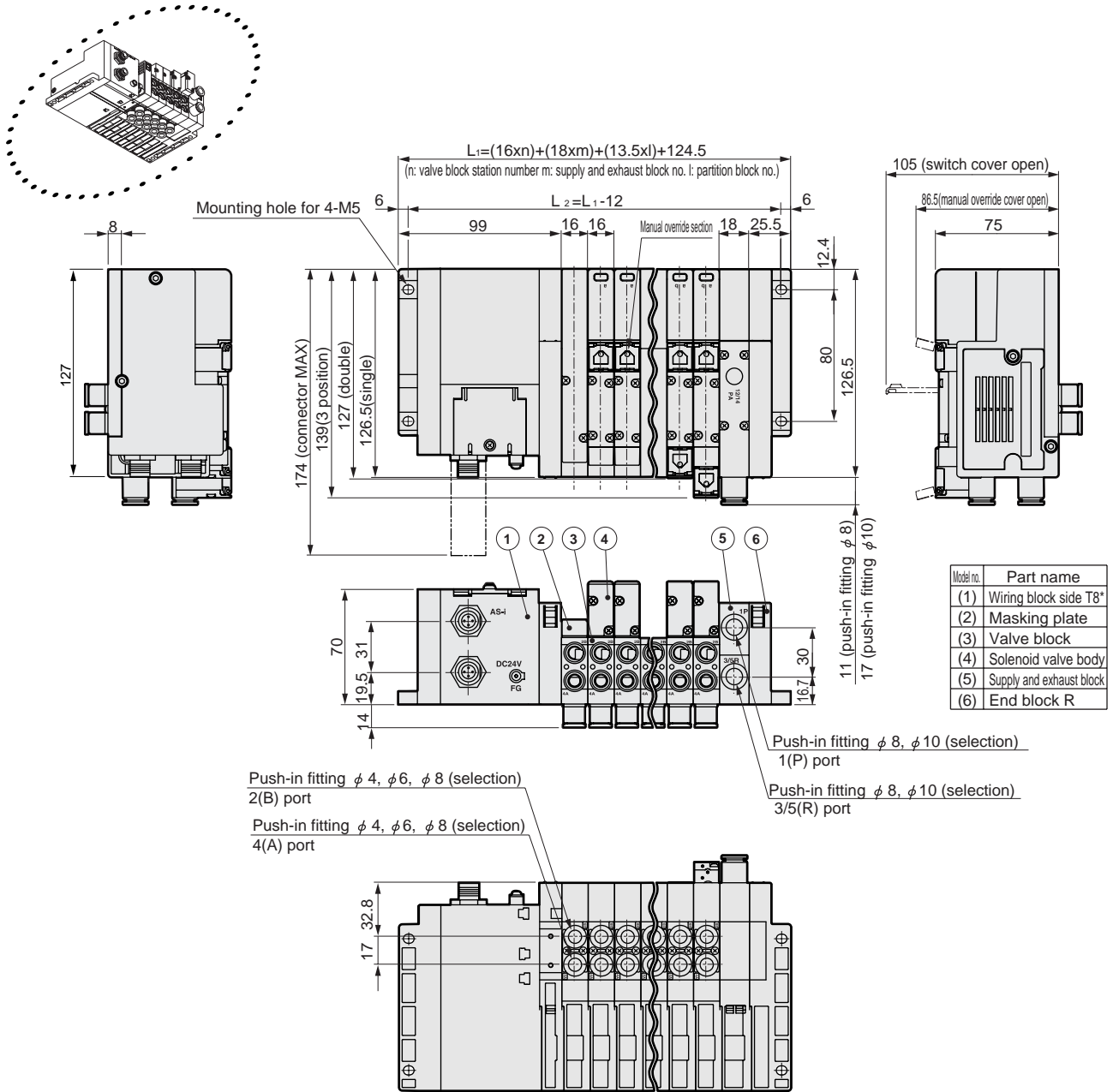


MW4G^B2-T1/2/3/5/8 Series

Dimensions

MW4G22

- Serial transmission AS-i(T8M*)



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

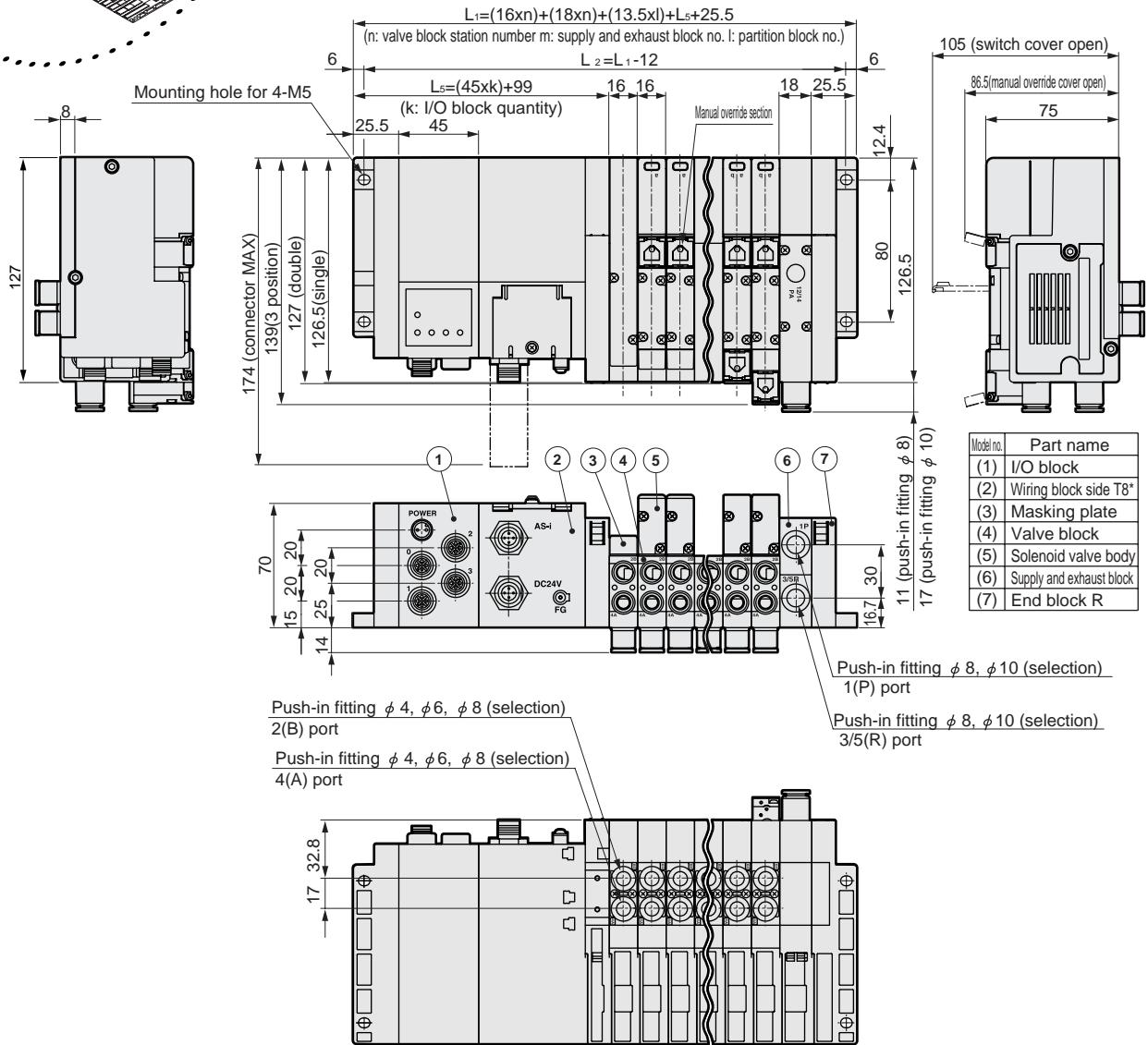
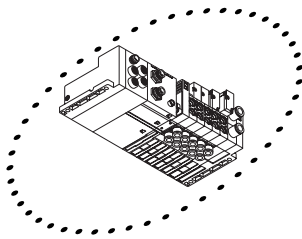
- $\phi 10$ (CL10)



Dimensions

MW4GZ2

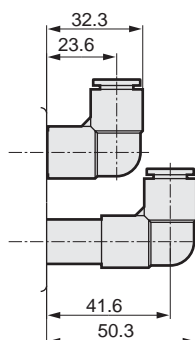
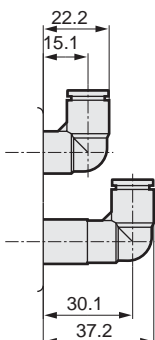
- Serial transmission AS-i(T8M*)+I/O block



- Push-in fitting L type for supply and exhaust block (upward)

- $\phi 8$ (CL8)

- $\phi 10$ (CL10)



Block manifold: Block configurations

Simple and flexible assembly makes it easy to increase stations and conduct maintenance.

● Valve block with solenoid valve

- (1) Only the necessary types and quantities of solenoid valves can be placed.
However, station no. is determined based on the wiring method. Refer to Page (5 and 23.)
- (2) Solenoid valve No. is counted from the left in ascending order with the fitting in front of you.

● Supply and exhaust block

- (1) Required number can be placed onto the connecting section for each block.
- (2) There are supply and exhaust blocks for internal pilot types and external pilot types. Select them according to your solenoid valve selection.
- (3) Check the partition section before installing for the multi-pressure specification.

● End block

- (1) Install them only on the opposite side of the wiring block.

● Partition block

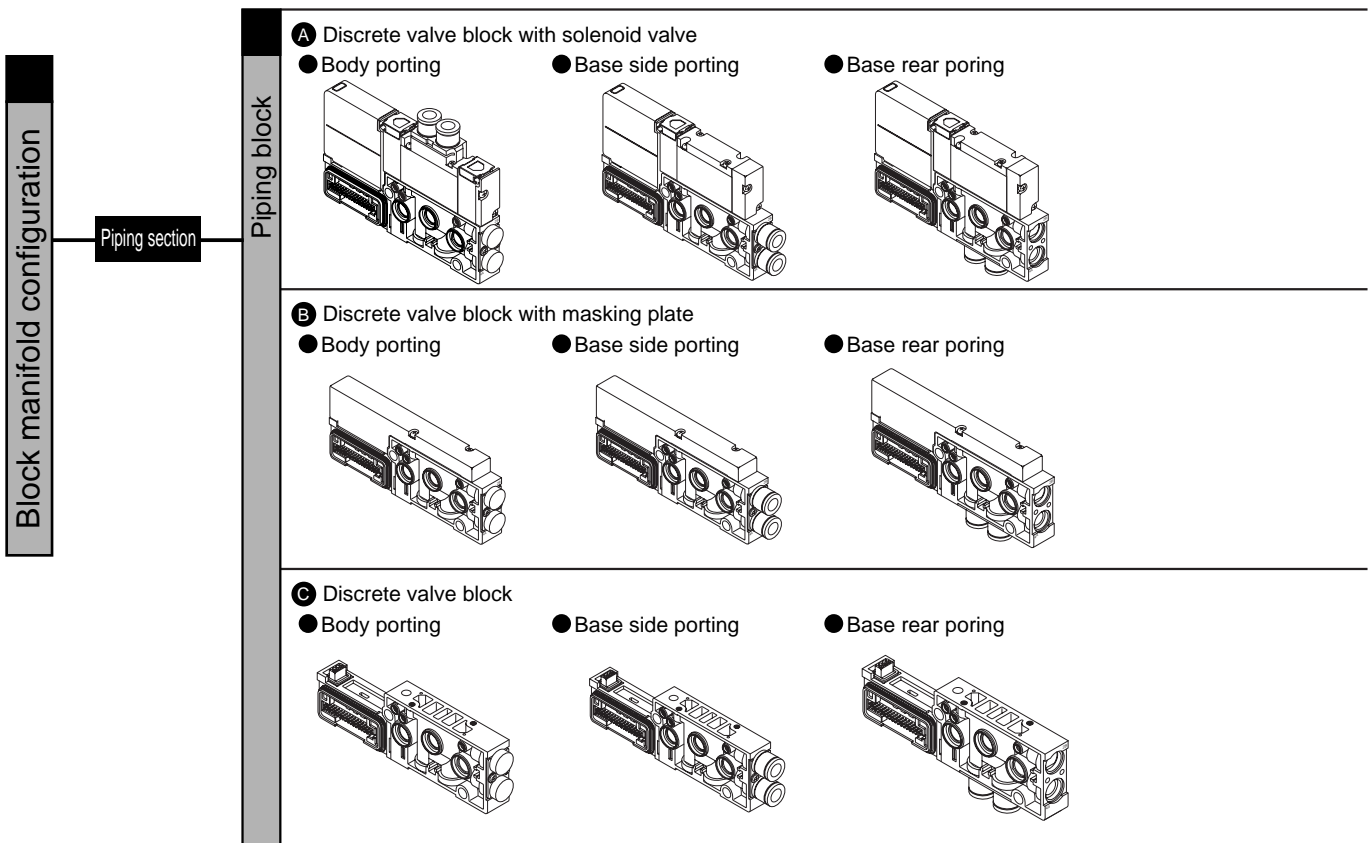
- (1) Install a supply and exhaust block and partition block for multi-pressure specifications.

● Manifold base

- (1) Only the manifold base can be ordered. However, restrictions apply on specifications.
(Manifold specification sheet is not required when ordering only the manifold base)

● I/O block

- (1) Required number of I/O blocks can be placed.
However, station no. is determined by the number of setting points for the serial transmission slave unit.
- (2) I/O are counted in ascending order from the serial transmission slave unit side.
- (3) The output block will be placed on the left if both input block and output block is placed. (Viewed from the fitting)

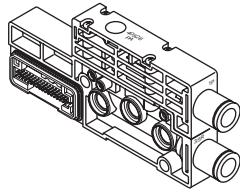


Block manifold configuration

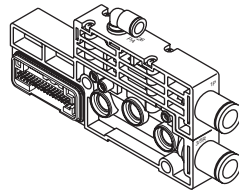
Piping section

Piping block

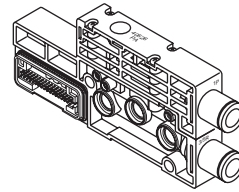
- D** Supply and exhaust block
- Internal pilot (Q)



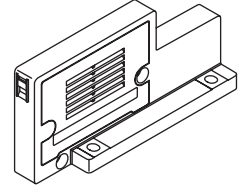
- External pilot (QK)



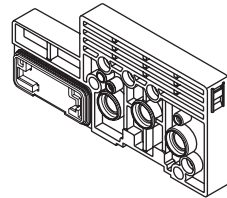
- Multi-pressure (QZ)



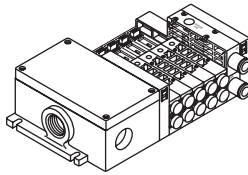
- E** End block
- Right



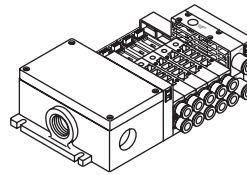
- F** Partition block



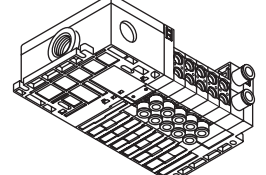
- G** Manifold base
- Body porting



- Base side porting



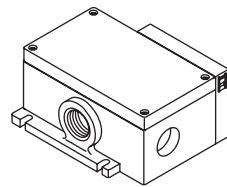
- Base rear porting



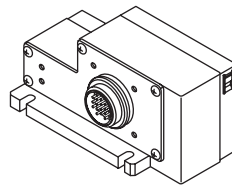
Wiring section

Wiring block

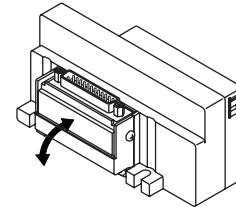
- H** Common gland block



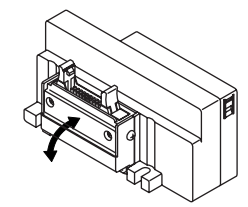
- I** Multi connector block



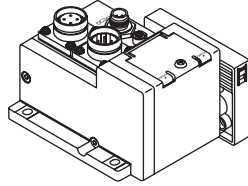
- J** D-sub connector



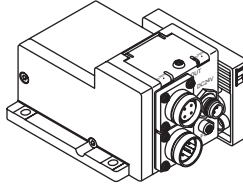
- K** Flat cable connector



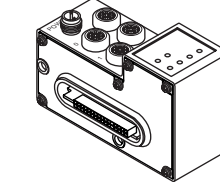
- L** Serial transmission block
- Top wiring



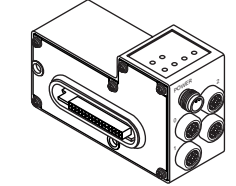
- Side wiring



- M** I/O block
- Top wiring



- Side wiring

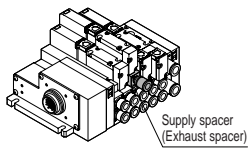


*The end block will be placed on the left upon shipping.

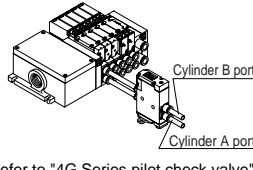
Related products

Related products

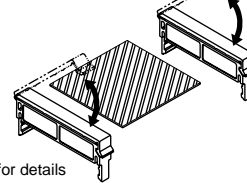
- N** Related products
- Supply spacer/exhaust spacer



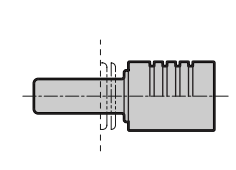
- Pilot check valve



- Tag plate

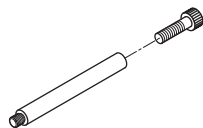


- Silencer

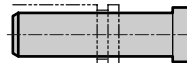


Refer to "4G Series pilot check valve" for details (Catalog No.CC-744) for details.

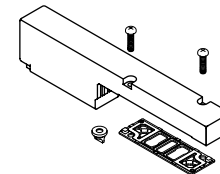
- Tie rod



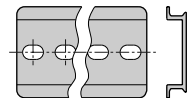
- Blanking plug



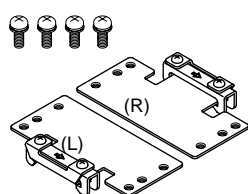
- Masking plate kit



- DIN rail



- DIN rail bracket kit



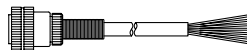
- Water proof cap



- Water proof plug



- Cable with connector (Wiring method T20)



- With D-sub connector Cable (Wiring method T30)



Block configurations

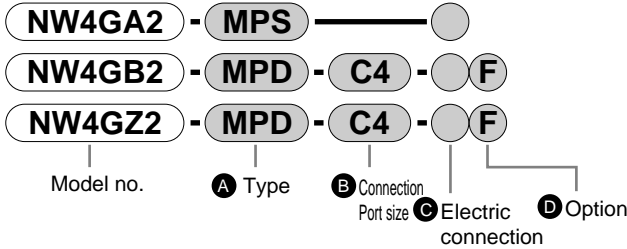
Piping section

A. Discrete valve block with solenoid valve * When ordered for expanding manifold, 2 tie rods will be included.

This block is assembled with solenoid valve and valve block (separate resin base).

Refer to pages 7 to 10, 25 to 28 for selection guide.

B. Discrete valve block with masking plate * When ordered for expanding manifold, 2 tie rods will be included.



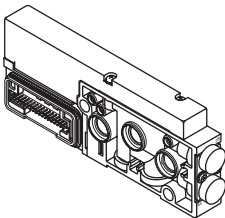
A Type (Note 1)		B Port size (Note 2)		C Electric connection (Note 3)		D Option	
MPS	Standard wiring (single)	C4	φ 4 push-in fitting	Blank	Connector relay circuit board specifications for DC.	Blank	No options
MPD	Double wiring (single)	C6	φ 6 push-in fitting	2 to 8	Select AC Cable length from page 54.	F	A/B port filter integrated
	Double/3 position	C8	φ 8 push-in fitting				
Note 1. Socket assembly for AC type is limited to double wiring so select MPD.		C4NC	A port/ φ 4 push-in fitting, B port/plug	Note 3. Select Blank when selecting a DC voltage, and the length of the socket assembly cable when selecting AC. However when ordering, if the manifold specification sheet is filled out, cable length is not required. Socket assembly for AC will be wiring for double solenoid.			
		C4NO	A port/plug, B port/ φ 4 push-in fitting				
		C6NC	A port/ φ 6 push-in fitting, B port/plug				
		C6NO	A port/plug, B port/ φ 6 push-in fitting				
		C8NC	A port/ φ 8 push-in fitting, B port/plug				
		C8NO	A port/plug, B port/ φ 8 push-in fitting				
		CL6	φ 6 push-in fitting Upward				
		CL8	φ 8 push-in fitting Upward				
		CL6NC	A port/ φ 6 push-in fitting Upward, B port/plug				
		CL6NO	A port/plug, B port/ φ 6 push-in fitting Upward				
CL8NC	A port/ φ 8 push-in fitting Upward, B port/plug						
CL8NO	A port/plug, B port/ φ 8 push-in fitting Upward						

Note 2. Port size indicates the size for A/B port.

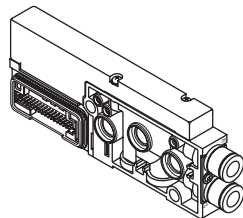
The A or B port plug specifications (*NC/NO) are available only for the 2-position single type.
 The CL* push-in fitting L type (upward) is available only for the 2-position single and double types.
 The A port is a long elbow fitting and the B port a short elbow fitting.
 Short elbow fitting will be provided when CL*NC/NO is selected.

<DC>

NW4GA2-MPS

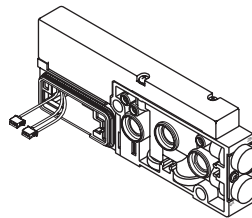


NW4GB2-MPS-C8

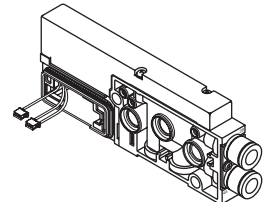


<AC>

NW4GA2-MPD-2

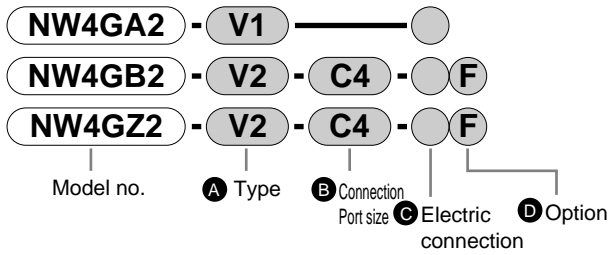


NW4GB2-MPD-C8-2



Piping section

C. Discrete valve block (discrete only) * When ordered for expanding manifold, 2 tie rods will be included.



A Type (Note 1)		B Port size (Note 2)		C Electric connection (Note 3)		D Option					
V1	Standard wiring (single)	C4	φ 4 push-in fitting	Blank	Connector relay circuit board specifications for DC.	Blank	No options				
V2	Double wiring (single) Double/3 position	C6	φ 6 push-in fitting	2 to 8	Select AC Cable length from the table below.	F	A/B port filter integrated				
		C8	φ 8 push-in fitting								
Note 1. Socket assembly for AC type is limited to double wiring so select V2.		C4NC	A port/ φ 4 push-in fitting, B port/plug					Select Blank when selecting a DC voltage, and the length of the socket assembly cable when selecting AC. Socket assembly for AC will be wiring for double solenoid.			
		C4NO	A port/plug, B port/ φ 4 push-in fitting								
		C6NC	A port/ φ 6 push-in fitting, B port/plug								
		C6NO	A port/plug, B port/ φ 6 push-in fitting								
		C8NC	A port/ φ 8 push-in fitting, B port/plug								
		C8NO	A port/plug, B port/ φ 8 push-in fitting								
		CL6	φ 6 push-in fitting Upward								
		CL8	φ 8 push-in fitting Upward								
		CL6NC	A port/ φ 6 push-in fitting Upward, B port/plug								
		CL6NO	A port/plug, B port/ φ 6 push-in fitting Upward								
CL8NC	A port/ φ 8 push-in fitting Upward, B port/plug										
CL8NO	A port/plug, B port/ φ 8 push-in fitting Upward										

Note 2. Port size indicates the size for A/B port.

The A or B port plug specifications (*NC/NO) are available only for the 2-position single type.

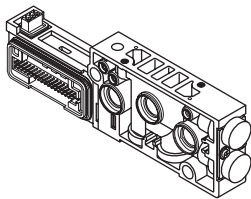
The CL* push-in fitting L type (upward) is available only for the 2-position single and double types.

The A port is a long elbow fitting and the B port a short elbow fitting.

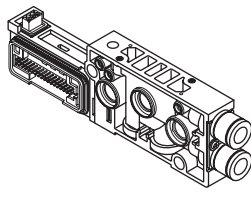
Short elbow fitting will be provided when CL*NC/NO is selected.

<DC>

NW4GA2-V1

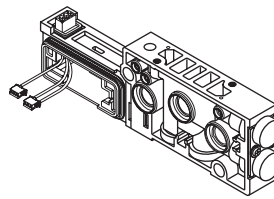


NW4GB2-V1-C8

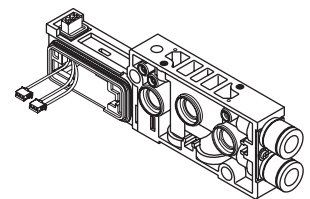


<AC>

NW4GA2-V2-2



NW4GB2-V2-C8-2



Valve block cable length for AC

If total length of supply and exhaust block and partition block between wiring block and valve block to be wired is 63mm or longer (e.g. 2 stations of supply and exhaust block +2 stations of partition blocks), calculate length W, then specify the longer lead wire near to the valve.

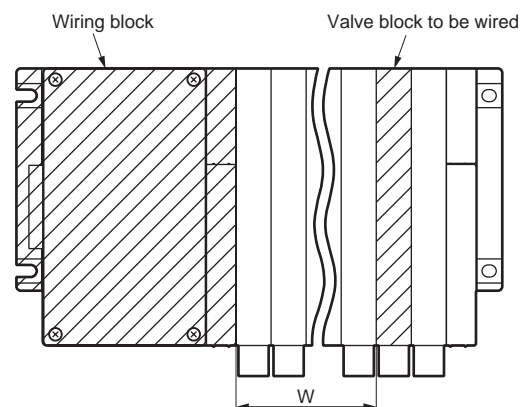
$$W=(23.5xn)+(18xm)+(13.5xI)+230$$

n: valve block station number m: supply and exhaust block no. l: partition block no.

Consult with CKD if W exceeds 610mm.

Selection no.	Cable length
2	Socket assembly for 1 to 2 stations (cable length 290mm) AC
3	Socket assembly for 3 to 4 stations (cable length 330mm) AC
4	Socket assembly for 5 to 6 stations (cable length 380mm) AC
5	Socket assembly for 7 to 8 stations (cable length 430mm) AC
6	Socket assembly for 9 to 10 stations (cable length 480mm) AC
7	Socket assembly for 11 to 14 stations (cable length 530mm) AC
8	Socket assembly for 15 to 18 stations (cable length 610mm) AC

[Fig. 1]



Piping section

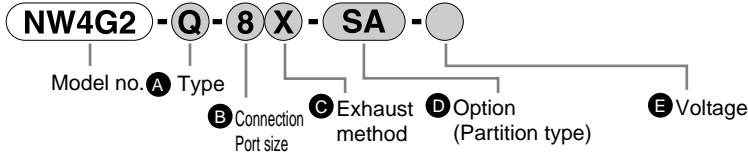
Problems could arise depending on the combination, so the function of each block should be studied in detail before making a selection.

D. Supply/exhaust block * When ordered for expanding manifold, 2 tie rods will be included.

The supply/exhaust block can be installed at any location next to a valve block.

The number of units is not limited. Install two or more units if combination with a partition block is required, or when the supply/exhaust must be increased.

A filter for preventing entry of foreign matter is used in the P port.



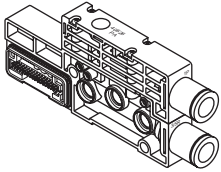
A Type (Note 1)		B Port size (P/R port) (Note 2)		C Exhaust method (Note 3)		D Option (partition type) (Note 4)		E Voltage	
Q	Internal pilot	8	φ 8 push-in fitting	Blank	Common exhaust	Blank	No partition	Blank	Connector relay circuit board specifications for DC.
QK	External pilot	8L	φ 8 push-in fitting Upward	X	Atmospheric release	SA	P/PR/PA/PR stop	AC	No connector relay circuit board for AC.
QZ	Multi-pressure circuit	10	φ 10 push-in fitting	Note 3. Atmospheric release type (X) exhausts from the end block. If X is selected, use atmospheric release type (EX) for the end block.		S	P/R stop, PA, PR go	Note 4. If a partition is installed in supply and exhaust block, indicate this. In mix manifold including multi pressure use, etc., the station width will be reduced. Indicate the installation location in the manifold specifications sheet as locating the partition side on the left of supply and exhaust block with the supply and exhaust side on the right.	
QKZ	External pilot (PA/PR separate)	10L	φ 10 push-in fitting Upward						

Note 1. QZ can not be used as a discrete unit. Always combine with another type (Q/QK/QKZ) to use.

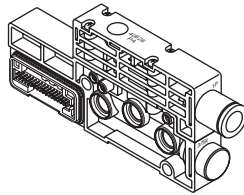
Note 2. P port has an integrated filter to prevent foreign material from entering.

<DC>

NW4G2-Q-10

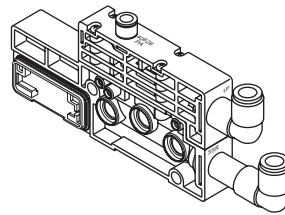


NW4G2-Q-10X

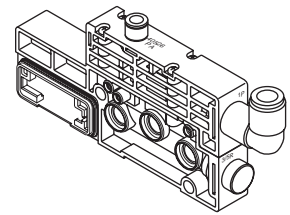


<AC>

NW4G2-QK-10L-AC



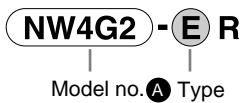
NW4G2-QK-10LX-AC



Refer to page 56 for circuit diagram.

E. End block

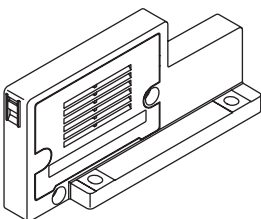
The atmospheric release type has a built-in exhaust muffler.



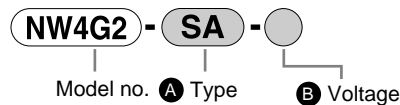
A Type (Note 1)	
E	Common exhaust
EX	Atmospheric release

Note 1. Muffler is integrated in the atmospheric release type (EX).

NW4G2-ER



F. Partition block * When ordered for expanding manifold, 2 tie rods will be included.

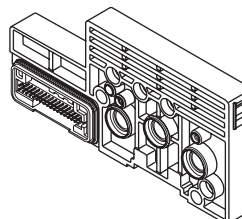


A Type (Note 1)		B Voltage	
SA	P/PR/PA/PR stop	Blank	Connector relay circuit board specifications for DC.
S	P/R stop, PA, PR go	AC	No connector relay circuit board for AC.

Note 1. With blocks other than SA, the pilot pressure PA, PR passage is not sealed. Consider this when designing system.

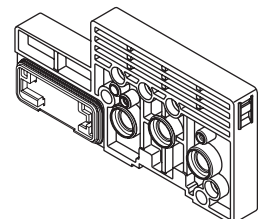
<DC>

NW4G2-S



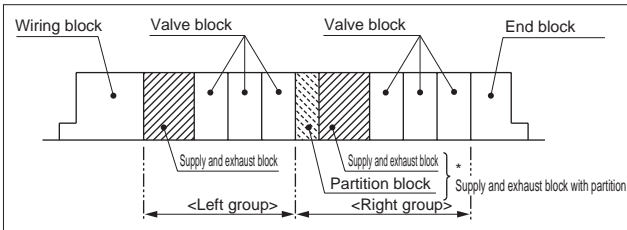
<AC>

NW4G2-S-AC



Piping section

● Notes when configuring manifold.



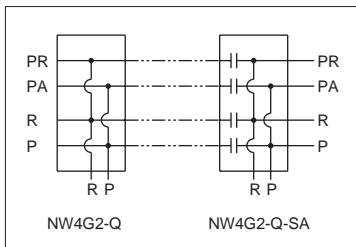
- The difference between internal pilot or external pilot type is determined by the supply/exhaust block selection. Valve blocks are identical.
- Various supply pressures, etc., can be mixed by combining the partition block and supply/exhaust block.
- Reduce footprint by using a supply and exhaust block with the function of a partition block.
- Viewed from piping port, install the supply and exhaust block with partition as partition side on the left while supply and exhaust side on the right.

● Configuring system by combining blocks

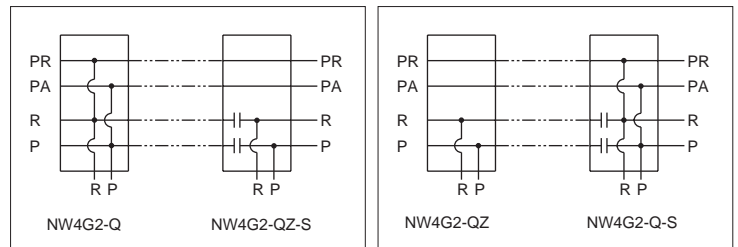
- Various pneumatic systems can be configured by selecting and combining the partition block and supply/exhaust block or supply/exhaust block with partition. Faults may occur depending on the configuration, so sufficiently understand the function of each block before selecting.
- Refer to the following example. (In the example, a supply and exhaust block with partition is used)

Example of configuration of internal pilot type (circuit symbol)

(1) If 2 different air pressure within working pressure range (0.2 to 0.7 MPa) is supplied within working pressure.



(2) When supply pressure is within working pressure range (0.2 to 0.7 MPa) and low pressure (0.2 MPa or less) or low vacuum



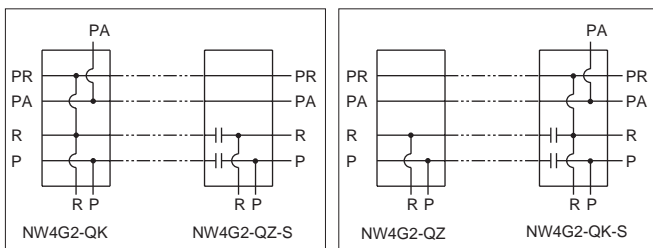
*QZ side is low pressure or low vacuum circuit side.

*Prot R is located on vacuum side in low vacuum circuit, while port P is released or pressurized.

Example of configuration of external pilot type (circuit symbol)

* 0.2 to 0.7 MPa is to be supplied to pilot air supply port (PA).

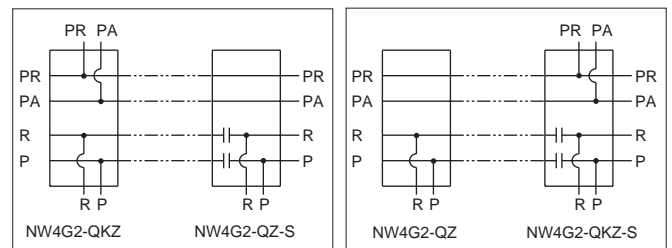
(3) If supply air pressure is low (0.2 MPa or less) or low vacuum.



*QK side is located on low pressure circuit side and QZ is located on the low vacuum circuit side as an example.

*Prot R is located on vacuum side in low vacuum circuit, while port P is released or pressurized.

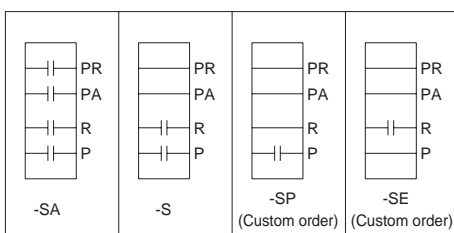
(4) If supply air pressure is low vacuum and 2 types.



*Prot R is located on vacuum side in low vacuum circuit, while port P is released or pressurized.

● Partition specifications (partition block/supply and exhaust block with partition)

*Consult with CKD for products other than standard specifications.(-SA, -S) (-SP, -SE)



Piping section

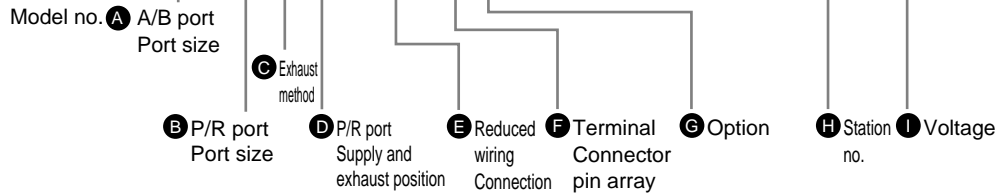
G. Manifold base

Discrete manifold base can be purchased. But the specifications may be limited.
(Manifold specifications are not necessary when only the manifold base is ordered)

Body porting: **MW4GA2** - **10** - **U** - **T10** **W** - **5** - **3**

Sub-base side porting: **MW4GB2** - **C8** - **10** - **U** - **T10** **W** - **5** - **3**

Sub-base rear porting: **MW4GZ2** - **C8** - **10** - **U** - **T10** **W** - **5** - **3**



A A/B port Port size		B P/R port Port size		C Exhaust method		D P/R port Supply and exhaust position		E Reduced wiring		F Terminal connector pin array	
C4	φ 4 push-in fitting	8	φ 8 push-in fitting	Blank	Common exhaust	D	Left	T10	Common gland (M3 screw left specifications)	W	double wiring
C6	φ 6 push-in fitting	8L	φ 8 push-in joint L(upward)	X	Atmospheric release	U	Right	T20	Multi connector Left	*All of them will be wired for double solenoid. However, only double wiring specifications is available for T20(multi-connector), W does not need to be specified.	
C8	φ 8 push-in fitting	10	φ 10 push-in fitting					T8G1	Serial transmission CC-Link (16 points output)		
		10L	φ 10 push-in joint L(upward)								

*Surge suppressor and light provided as standard.
*AC100V is not available for multi-connector specifications.
AC100V and DV12v is not available for serial transmission specifications

G Option		H Station no.		I Voltage	
Blank	No options	2	2 stations	1	AC100V
K	External pilot	to	to	3	DC24V
F	A/B port filter integrated	9	9 stations	4	DC12V

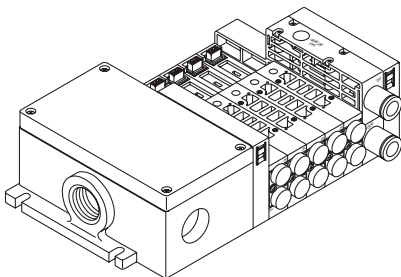
* Filter integrated in P port

* I/O block configuration not available.

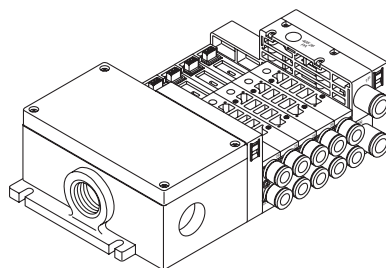
*Specifications may change due to reduced wiring specifications. Refer to pages 5 and 23.

* Rectified bridge integrated in AC 100V.

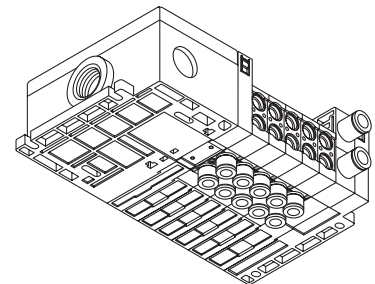
MW4GA2 (Body porting)



MW4GB2(Sub-base side porting)



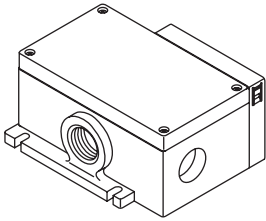
MW4GZ2(Sub-base rear porting)



Wiring section (Wiring block) *Discrete wiring block can not be ordered.

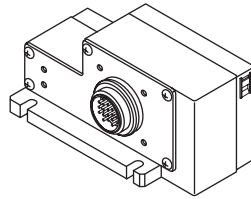
H. Common gland block (T10)

NW4G2-T10



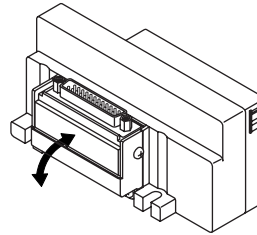
I. Multi connector block (T20)

NW4G2-T20



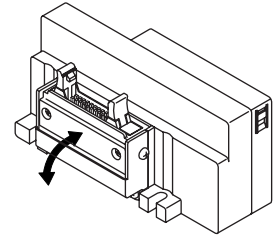
J. -sub connector (T30)

NW4G2-T30



K. Flat cable connector (T5*)

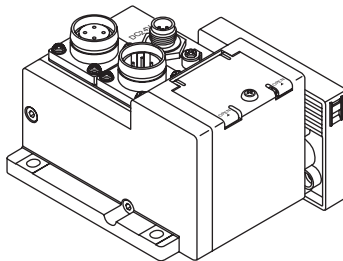
NW4G2-T5*



L. Serial transmission block (When ordering a manifold and combining it with an input/output block, the end block is equipped on the left side of the input/output block as a standard.)

●CC-Link(T8G*)

NW4GA2-T8G*

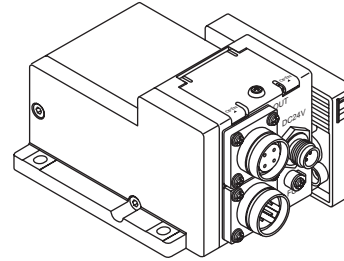


NW4GA2 - T8G1

A Type

A Type	
T8G1	16 points output
T8G2	32 points output
T8G7	16 points input/16 points output

NW4GB2-T8G*



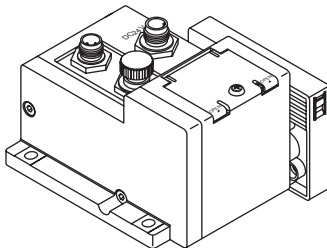
NW4GB2 - T8G1

A Type

A Type	
T8G1	16 points output
T8G2	32 points output
T8G7	16 points input/16 points output

●Device Net(T8D*)

NW4GA2-T8D*

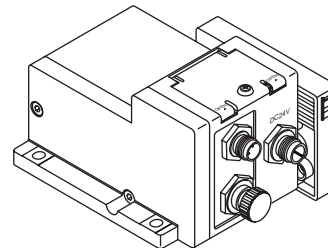


NW4GA2 - T8D1

A Type

A Type	
T8D1	16 points output
T8D2	32 points output
T8D7	16 points input/16 points output

NW4GB2-T8D*



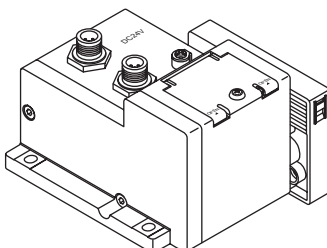
NW4GB2 - T8D1

A Type

A Type	
T8D1	16 points output
T8D2	32 points output
T8D7	16 points input/16 points output

●AS-i(T8M*)

NW4GA2-T8M*

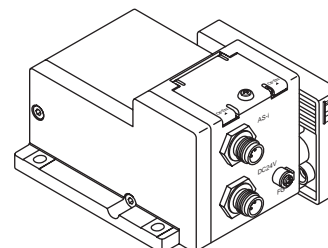


NW4GA2 - T8M6

A Type

A Type	
T8MA	4 points input/4 points output
T8M6	8 points input/8 points output

NW4GB2-T8M*



NW4GB2 - T8M6

A Type

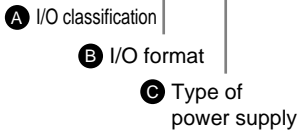
A Type	
T8MA	4 points input/4 points output
T8M6	8 points input/8 points output

NW4G Series

M. I/O block * When ordered for expanding manifold, 2 tie rods will be included.

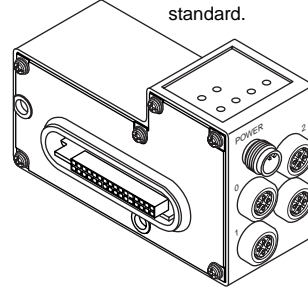
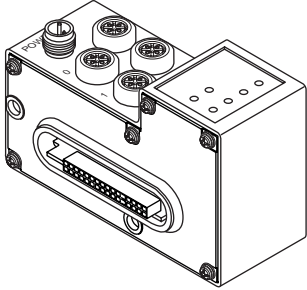
Top wiring: **NW4GA2- IN - N - K**

Side wiring: **NW4GB2- OUT - N - B**



NW4GA2-^{IN}-^N-^K
_{OUT-P-B}

NW4GB2-^{IN}-^N-^K
_{OUT-P-B}

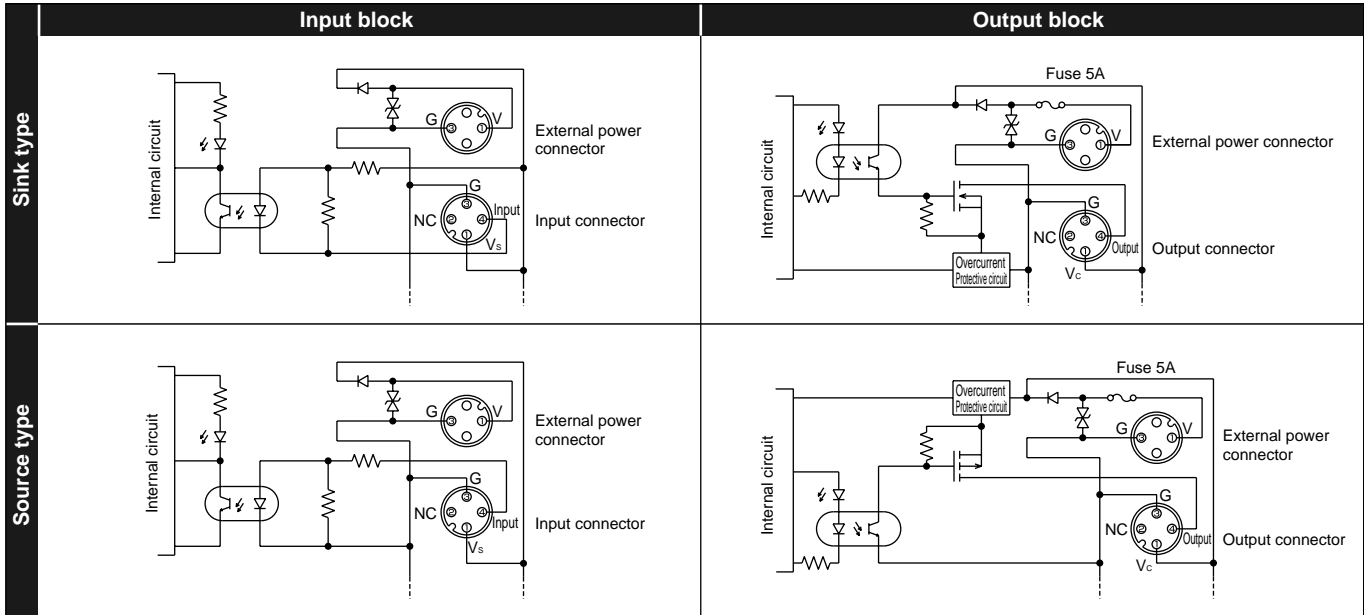


A I/O classification		B I/O format		C Type of power supply	
IN	Input	N	Sink	K	Common with serial transmission slave unit *1,*2
OUT	Output	P	Source	B	External power

*1. Output block is only for external power(B).
*2. When common with serial transmission slave unit (K) is selected, water proof cap is equipped on power supply connector as standard.

*When ordering a manifold and combining it with an input/output block, the end block is equipped on the left side as a standard.

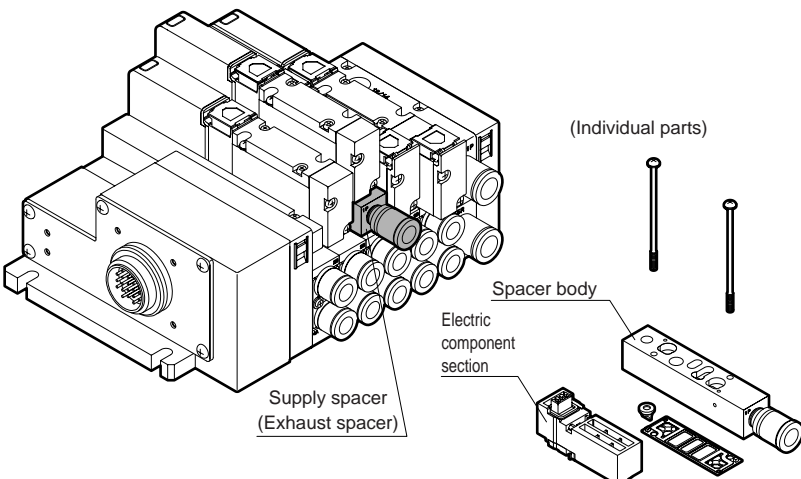
I/O format (simplified circuit diagram)



*Refer to page 85 for wiring method.

Related products

● Air supply spacer and exhaust spacer



Specifications

● Supply spacer

Descriptions	W4G2-P-*-*	
Effective sectional area mm ²	P→A·B	7.5
	A·B→R	7.5
Weight	g	60

● Exhaust spacer

Descriptions	W4G2-R-*	
Effective sectional area mm ²	P→A·B	7
	A·B→R	7
Weight	g	60

● Air supply spacer Discrete model no.

W4G2 - P - **GWS6**

A Type
Note 2

B Port size

● Exhaust spacer Discrete model no.

W4G2 - R - **GWS6**

A Port size

Symbol	Descriptions	
A Type		
Blank	Internal pilot	
K	External pilot	
B Port size		
	Port size	Descriptions
Blank	Rc1/8	
GWS6	φ 6	With GWS6-6-S
GWS8	φ 8	With GWS8-6-S
A Port size		
	Port size	Descriptions
Blank	Rc1/8	
GWS6	φ 6	With GWS6-6-S
GWS8	φ 8	With GWS8-6-S
SLW	With silencer (SLW-6S)	

⚠ Cautions for model No. selection

Note 1 When selecting the manifold, indicate the spacer mounting location and quantity in manifold specifications. (Page 97 to 99)

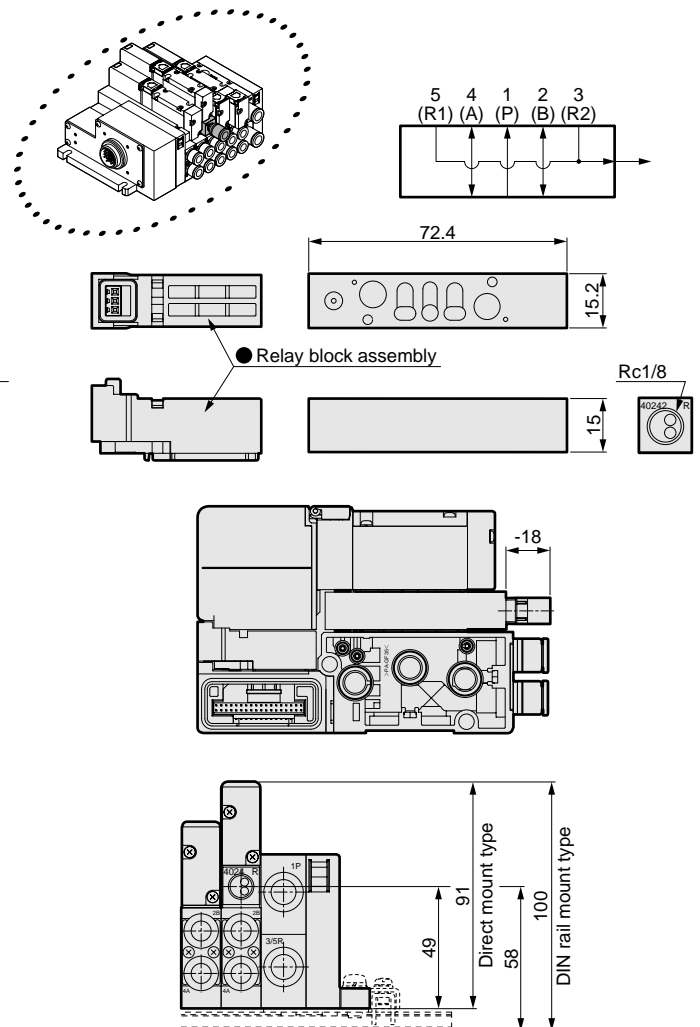
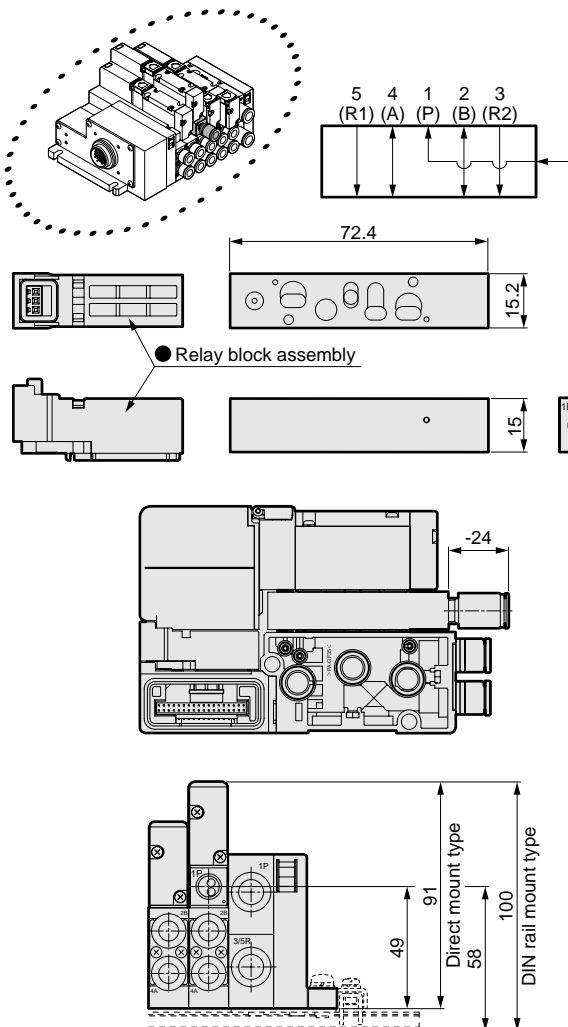
Note 2 Use the supply spacer for external pilot (W4G2-PK) if the manifold is external pilot specification (K).

Note 3 The supply spacer and exhaust spacer cannot be mounted on the same valve block station in the manifold.

Dimensions

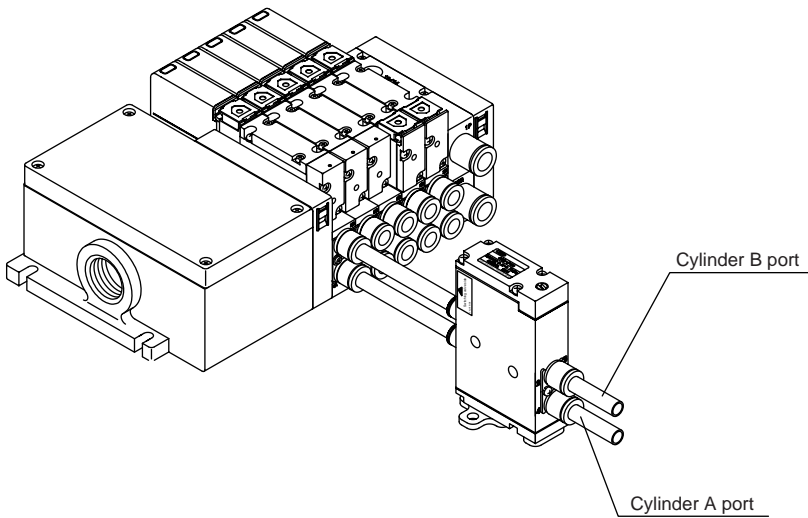
● Supply spacer

● Exhaust spacer



Related products Pilot check valve and tag plate

● Pilot check valve



*Refer to "4G Series pilot check valve" for details

Related products

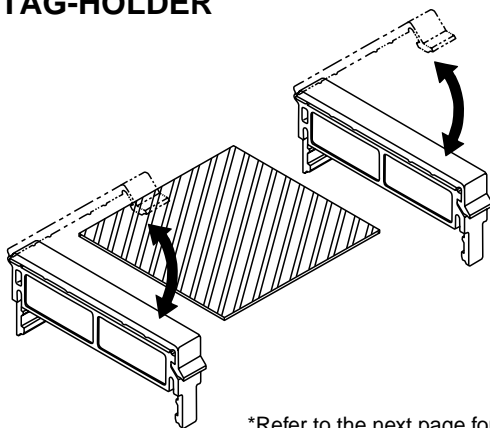
● Tag plate Attached to manifold body.

Write in a circle on the tag plate section of the manifold specification sheet on pages 97 to 99 if it is required.

<Tag holder>

N4G2 -TAG-HOLDER

A Model no.
N4G2
(Set of 2 pieces)



*Refer to the next page for dimensions.

<Tag plate>

N4G2 -TAG-PLATE- A - Quantity

A Model no.	B Type (Note 1)	C Length (mm) Note 2
N4G2	A 4GA2	200
	B 4G ^B 2	300
		400

Note 1. Select B for MW4GZ2.

Note 2. Three lengths are available. 200, 300, 400.

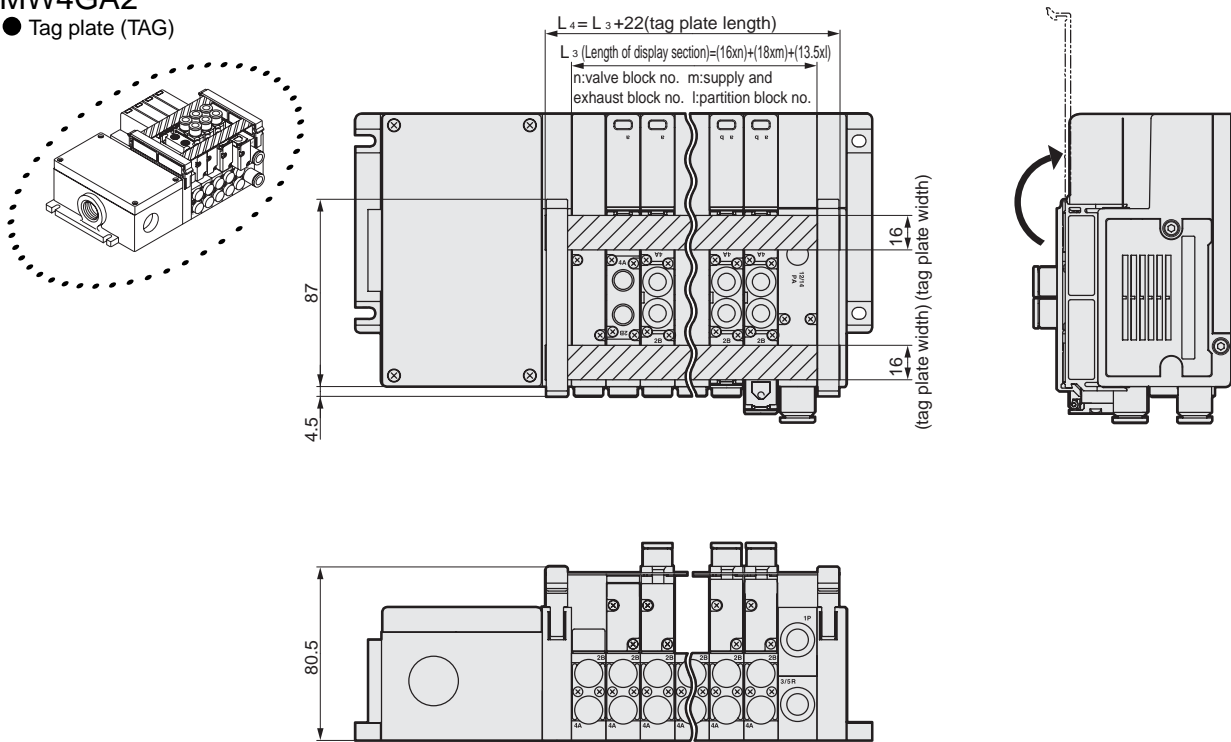
Cut them to suit your needs.

Note 3 : Tag plate can not be attached if there is a supply (exhaust) spacer.

● Tag plate

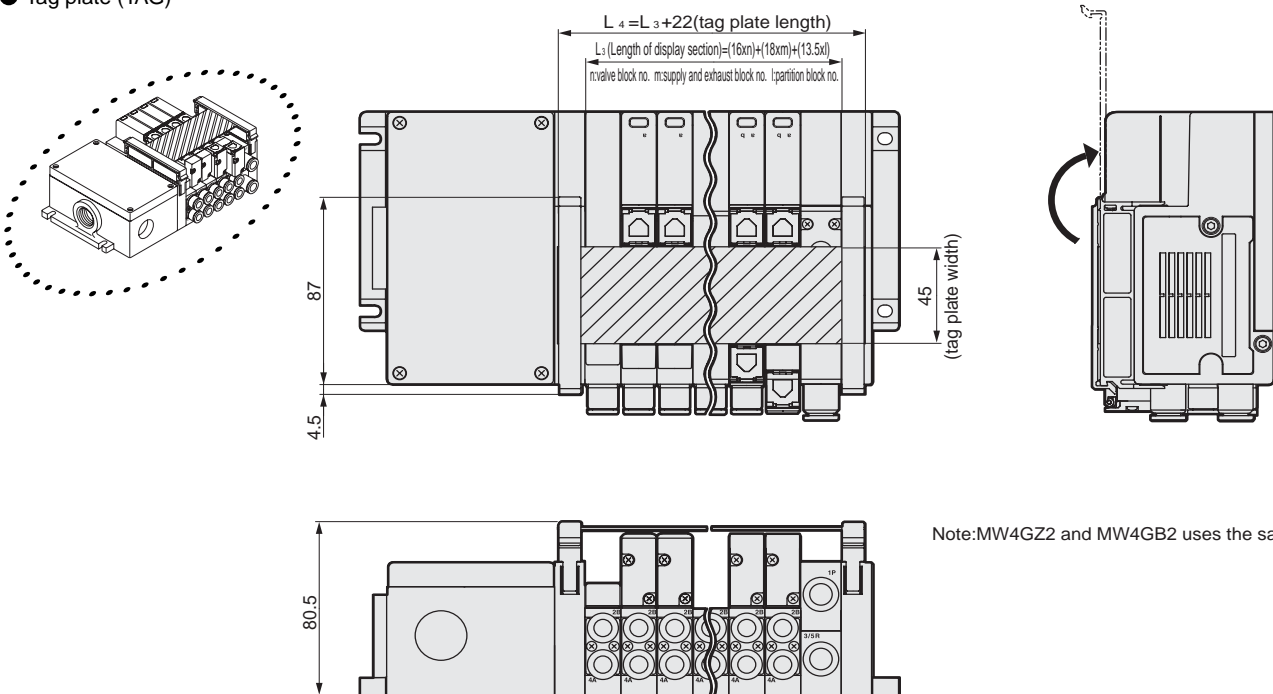
MW4GA2

● Tag plate (TAG)



MW4GZ2

● Tag plate (TAG)



Note: MW4GZ2 and MW4GB2 uses the same tag plate

Formula of table 1: L3 (length of display section)

$$L_3 = (16 \times n) + (18 \times m) + (13.5 \times l)$$

n: Valve block qty.

m: Supply and exhaust block qty.

l: Partition block qty.

Related products Tie rod, silencer, blanking plug, masking plate kit, DIN rail, DIN rail installation kit

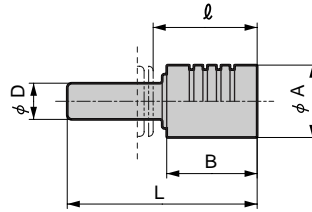
● Tie rod



W4G2-TR-V1
 Model no. **A** Type

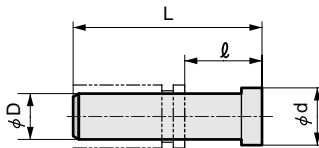
A Type	
V1	Valve block for 1 station (2 pc.)
Q	Supply and exhaust block (2 pc.)
S	Partition block (2 pc.)
M	I/O block (2 pc.)

● Silencer



Model no.	D	B	L	ℓ	A
SLW-H8	φ 8	20	42	23	16
SLW-H10	φ 10	27	53	34	20

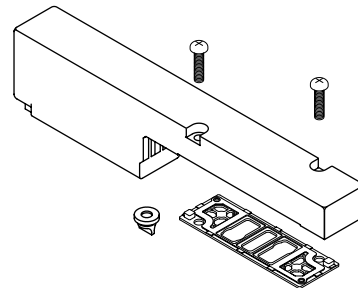
● Blanking plug



Model no.	D	L	ℓ	d
GWP4-B	φ 4	27	11	6
GWP6-B	φ 6	29	11.5	8
GWP8-B	φ 8	33	14	10
GWP10-B	φ 10	40	18.5	12

● Masking plate kit

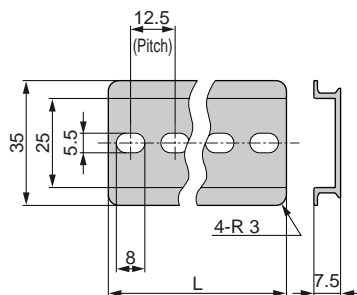
W4G2-MP



*Kit descriptions: Masking plate, gasket, PR check valve, 2 set screws

● DIN rail

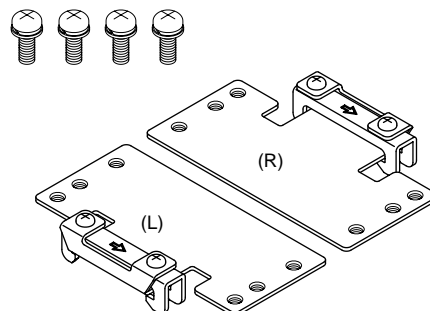
N4G-BAA (length)



*Refer to the formula on page 95 for DIN rail length.

● DIN rail bracket kit

W4G2-D

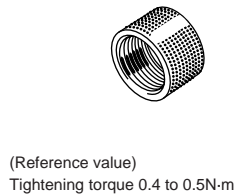


*The DIN rail mounting bracket set contains parts for one manifold set. (Kit descriptions: bracket 2 piece, set screw 4 pc.)

Part for I/O block

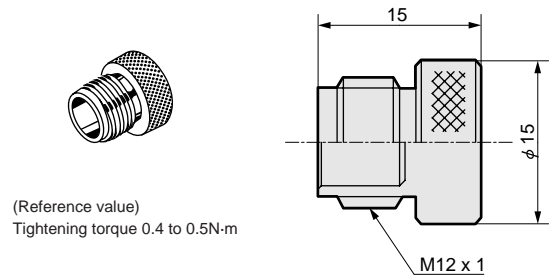
- Water proof cap

Model no.	Descriptions
W4G-XSZ-11	When power supply is common with serial transmission slave unit, this is used to provide jet-proof protection for the power supply connector.



- Water proof plug

Model no.	Descriptions
W4G-XSZ-12	Used to provide jet-proof protection for idle signal connectors.



● Multi-connector cable

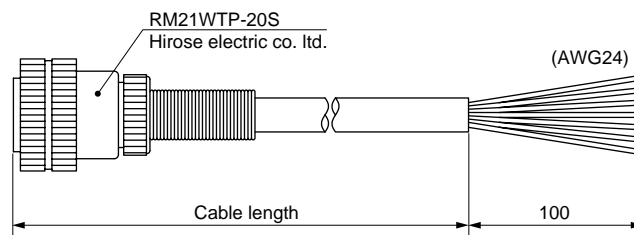
- Cable for multi-connector type (wiring method T20)

(cable with connector)

W4G -RMC- 3

Model no. **A** Cable length

A Cable length	
1	1m
3	3m
5	5m



Relations between terminal No. and conductor

Terminal No.		1	2	3	4	5	6	7	8	9	10
Conductor	Electric wire color	White	Brown	Green	Yellow	Gray	Pink	Blue	Red	Black	Purple
I.D.	Mark tube No.	1	2	3	4	5	6	7	8	9	10
Terminal No.		11	12	13	14	15	16	17	18	19	20
Conductor	Electric wire color	Gray/pink	Red/blue	White/green	Brown/green	White/yellow	Yellow/brown	White/gray	Gray/brown	(No)	(No)
I.D.	Mark tube No.	11	12	13	14	15	16	17	18	(No)	(No)

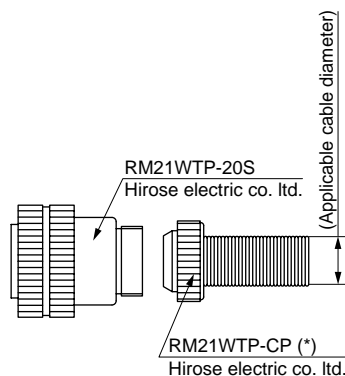
(only connector)

W4G -RM21WTP- 10

Model no. **A** Applicable cable diameter

A Applicable cable diameter	
8	φ 8
10	φ 10
12	φ 12

Note: Applicable cable diameter is clamping force and depending on the type of the cable.



*Refer to pages 86 to 89 for serial transmission slave unit and I/O block connector.

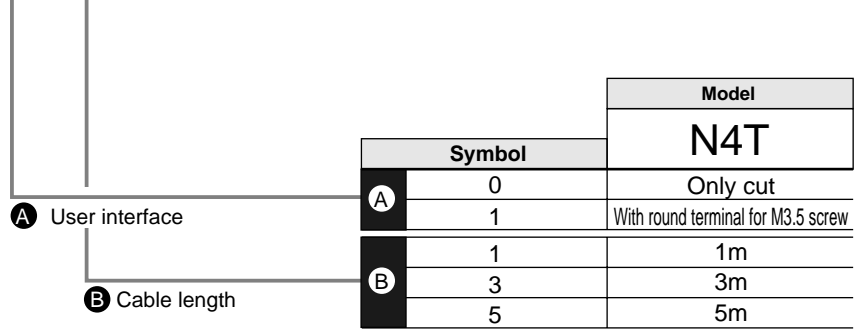
NW4G Series

Block manifold: Related products

- D-sub-cable with connector

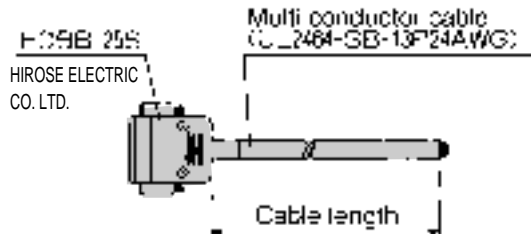
How to order D-sub-cable with connector

N4T - CABLE - D00 - 1



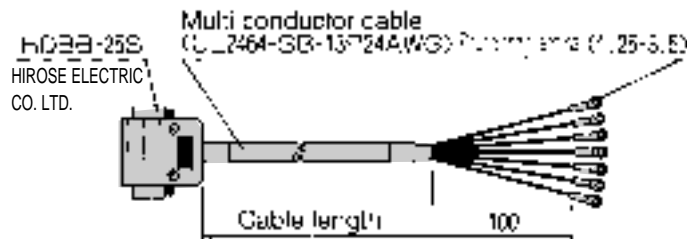
Correspondence of D-sub connector terminal No. and conductor

- N4T-CABLE-D00- (B)



D sub-connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Isolator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Type of mark	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 point	2 point	2 point
	Mark color	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
D sub-connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Isolator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Type of mark	2 point	2 point	2 point	2 point	2 point	2 point	2 point	3 point	3 point	3 point	3 point	3 point	
	Mark color	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	

- N4T-CABLE-D01- (B)



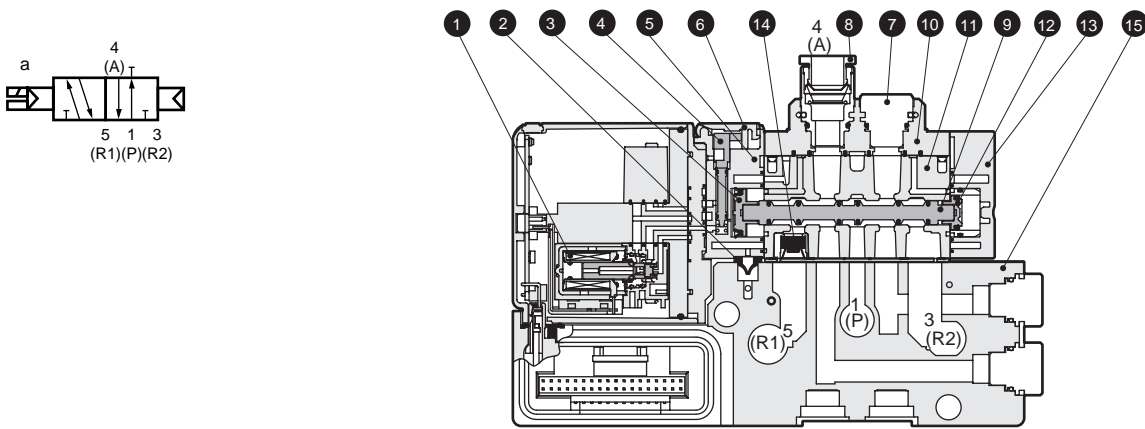
D sub-connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Isolator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Type of mark	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 point	2 point	2 point
	Mark color	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
Mark tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13
D sub-connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Isolator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Type of mark	2 point	2 point	2 point	2 point	2 point	2 point	2 point	3 point	3 point	3 point	3 point	3 point	
	Mark color	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	
Mark tube No.		14	15	16	17	18	19	20	21	22	23	24	25	

*Available up to 24 points. Cut off any excessive points before use.

Internal structure and parts list

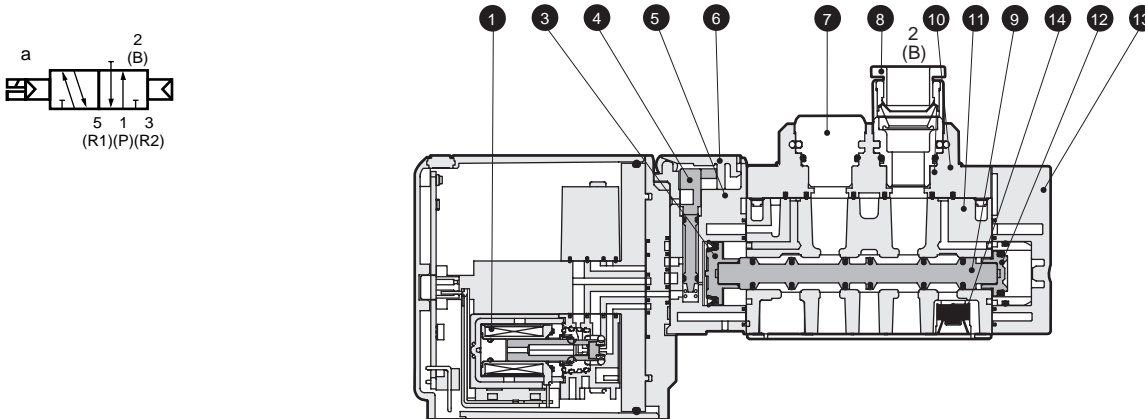
NW3GA210 (body porting)

● 2-position single solenoid: Normally closed



NW3GA2110

● 2-position single solenoid: Normally open



Main parts list

No.	Parts name	Material
1	Coil assembly	-
2	Pilot exhaust check valve	Nitrile rubber
3	Piston D assembly	-
4	Manual override	Resin
5	Piston room	Resin
6	Protective cover of manual override	Resin
7	Plug cartridge	Aluminum
8	Cartridge type push-in joint	-
9	Spool assembly	-
10	Joint adaptor	Resin
11	Body	Aluminum alloy die-casting
12	Piston S assembly	-
13	Cap	Resin
14	Check valve	-
15	Valve block	Resin

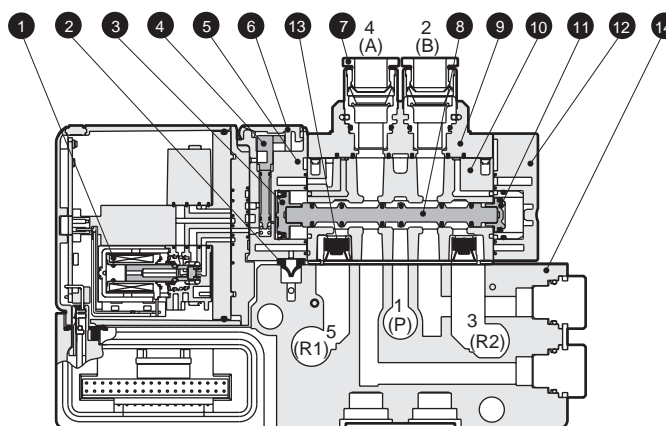
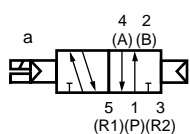
Repair parts list

No.	Parts name	Model no.	
8	Push-in fitting And related parts	φ 4 straight	4G2-JOINT-C4
		φ 6 straight	4G2-JOINT-C6
		φ 8 straight	4G2-JOINT-C8
		Plug cartridge	4G2-JOINT-CPG

Internal structure and parts list

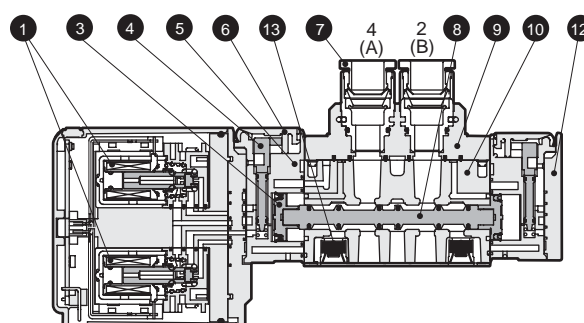
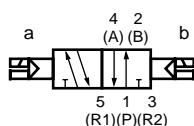
NW4GA210 (body porting)

● 2-position single solenoid



NW4GA220

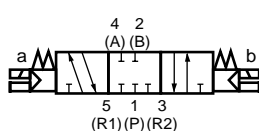
● 2-position double solenoid



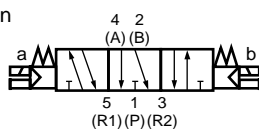
NW4GA240

● 3 position

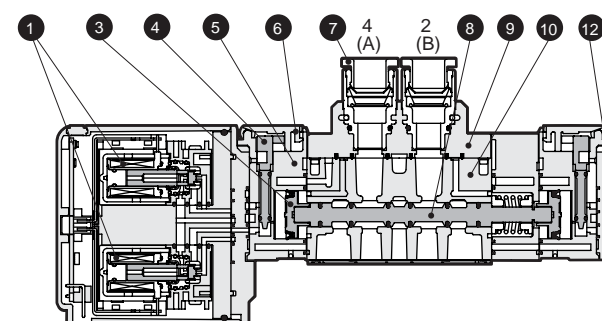
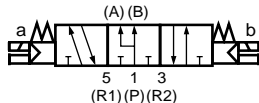
All ports closed



A/B/R connection



P/A/B connection



Main parts list

No.	Parts name	Material
1	Coil assembly	-
2	Pilot exhaust check valve	Nitrile rubber
3	Piston D assembly	-
4	Manual override	Resin
5	Piston room	Resin
6	Protective cover of manual override	Resin
7	Cartridge type push-in joint	-
8	Spool assembly	-
9	Joint adaptor	Resin
10	Body	Aluminum alloy die-casting
11	Piston S assembly	-
12	Cap	Resin
13	Check valve	-
14	Valve block	Resin

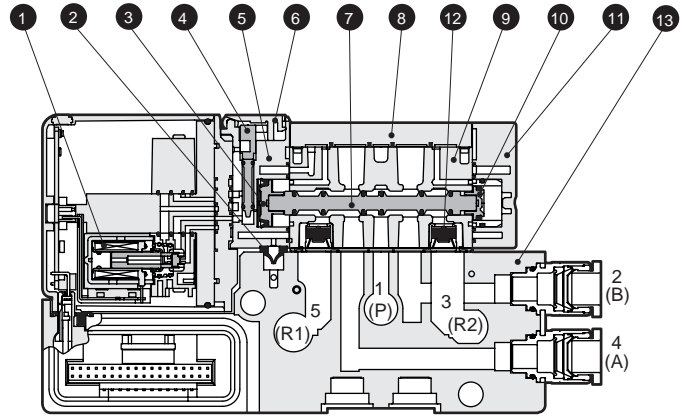
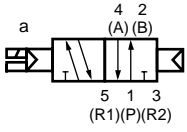
Repair parts list

No.	Parts name	Model no.	
7	Push-in fitting And related parts	φ 4 straight	4G2-JOINT-C4
		φ 6 straight	4G2-JOINT-C6
		φ 8 straight	4G2-JOINT-C8
		Plug cartridge	4G2-JOINT-CPG

Internal structure and parts list

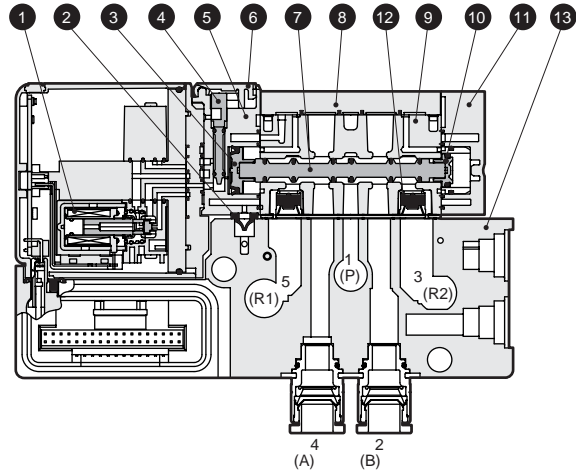
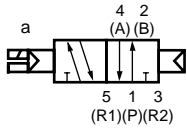
NW4GB210 (base side porting)

● 2-position single solenoid



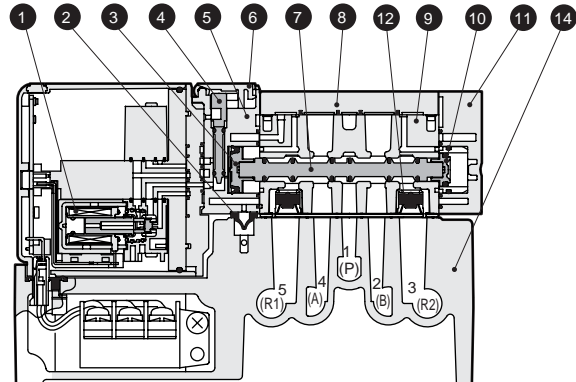
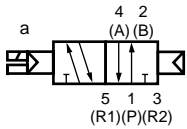
NW4GZ210 (base rear porting) *Same solenoid valve as NW4GB210

● 2-position single solenoid



NW4GB210 (Discrete base rear porting) *Same solenoid valve as NW4GB210

● 2-position single solenoid



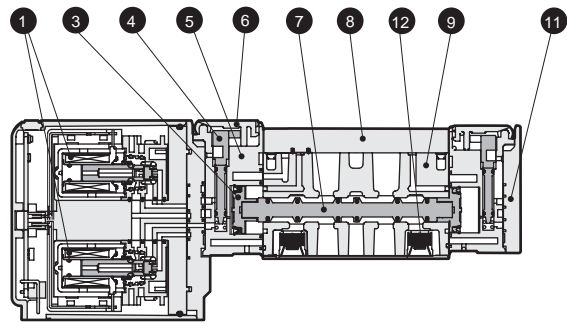
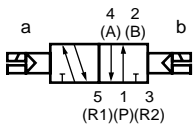
Main parts list

No.	Parts name	Material	No.	Parts name	Material
1	Coil assembly	-	11	Cap	Resin
2	Pilot exhaust check valve	Nitrile rubber	12	Check valve	-
3	Piston D assembly	-	13	Valve block	Resin
4	Manual override	Resin	14	Sub-plate	Aluminum alloy die-casting
5	Piston room	Resin			
6	Protective cover of manual override	Resin			
7	Spool assembly	-			
8	Plate	Resin			
9	Body	Aluminum alloy die-casting			
10	Piston S assembly	-			

Internal structure and parts list

NW4G^B_Z220/W4GB220

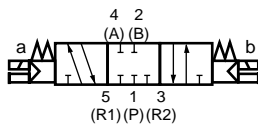
● 2-position double solenoid



NW4G^B_Z240/W4GB240

● 3 position

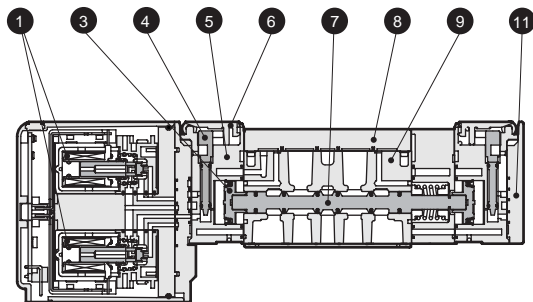
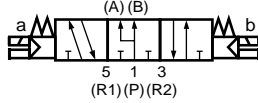
All ports closed



A/B/R connection



P/A/B connection



Main parts list

No.	Parts name	Material	No.	Parts name	Material
1	Coil assembly	-	11	Cap	Resin
2	Pilot exhaust check valve	Nitrile rubber	12	Check valve	-
3	Piston D assembly	-			
4	Manual override	Resin			
5	Piston room	Resin			
6	Protective cover of manual override	Resin			
7	Spool assembly	-			
8	Plate	Resin			
9	Body	Aluminum alloy die-casting			
10	Piston S assembly	-			

Technical data ① pneumatics system selection guide

- (1) The average speed of the cylinder can be calculated by the combination of 4G series and piping system. It is expressed by the cylinder's piston speed obtained by dividing the stroke by the time the piston rod moved after starting, when the cylinder rod is installed facing upward. When the load rate is 50%, the average speed should be the approximate cylinder speed multiplied by 0.5.
- (2) The average speed of cylinder listed on pneumatic components selection guide is the value when a single cylinder is operated.
- (3) Effective sectional area of a solenoid valve used for the calculation below is for 2-position valves.
- (4) This selection guide is only for reference. With the CKD sizing program, confirm conditions to be actually used.
- (5) Effective sectional area S and sonic conductance C is converted as $S \cong 5.0 \times C$.

Standard system table (check valve integrated)

1. Common exhaust

Valve port size	System No.	Speed Controller	Cylinder piping Pipe length 1m	Common exhaust piping	Composite effective sectional area (mm ²)
C4	A1	SC3W-6-4	φ 4 x φ 2.5	φ 8 x φ 5.7 x 3m	1.5
C6	B1	SC3W-6-6	φ 6 x φ 4	φ 8 x φ 5.7 x 3m	2.8
C6	B2	SC1-6	φ 6 x φ 4	φ 8 x φ 5.7 x 3m	4.0
C8	B3	SC1-8	φ 8 x φ 5.7	φ 8 x φ 5.7 x 3m	5.5

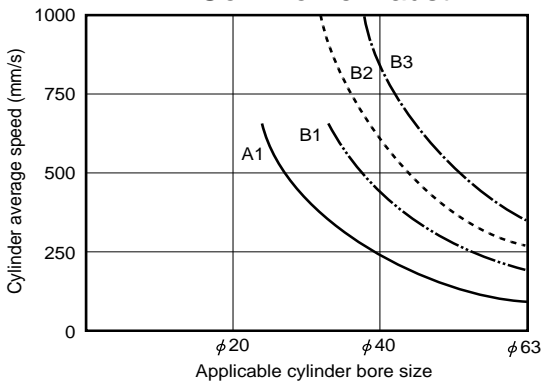
2. Atmospheric release exhaust (integrated muffler)

Valve port size	System No.	Speed Controller	Cylinder piping Pipe length 1m	Common exhaust piping	Composite effective sectional area (mm ²)
C4	A2	SC3W-6-4	φ 4 x φ 2.5	NW4G2-EX	1.6
C6	B4	SC3W-6-6	φ 6 x φ 4	NW4G2-EX	3.0
C6	B5	SC1-6	φ 6 x φ 4	NW4G2-EX	4.3
C8	B6	SC1-8	φ 8 x φ 5.7	NW4G2-EX	6.6

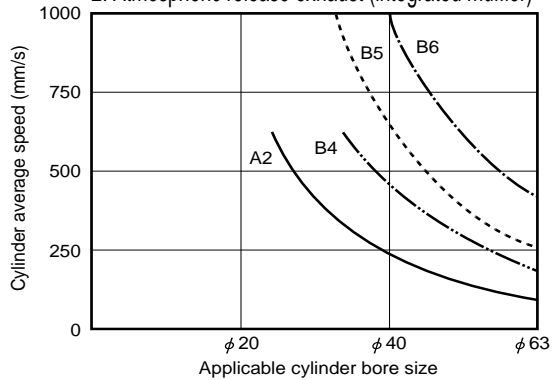
3. Silencer assembly exhaust

Valve port size	System No.	Speed Controller	Cylinder piping Pipe length 1m	Common exhaust piping	Composite effective sectional area (mm ²)
C4	A3	SC3W-6-4	φ 4 x φ 2.5	SLW-H8	1.5
C6	B7	SC3W-6-6	φ 6 x φ 4	SLW-H8	2.8
C6	B8	SC1-6	φ 6 x φ 4	SLW-H8	3.8
C8	B9	SC1-8	φ 8 x φ 5.7	SLW-H10	6.4

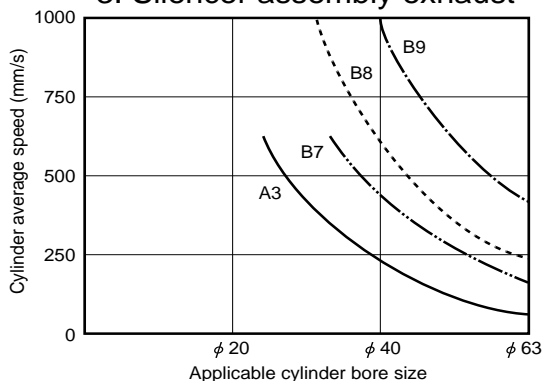
1. Common exhaust



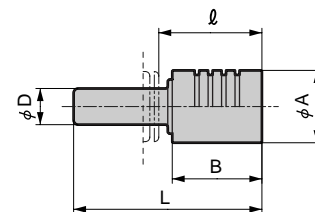
2. Atmospheric release exhaust (integrated muffler)



3. Silencer assembly exhaust



● Silencer



Model no.	D	B	L	l	A
SLW-H8	φ 8	20	42	23	16
SLW-H10	φ 10	27	53	34	20

How to use guide

The device selection guide is used to select the optimum model.

● Fluid control components selection

Whether the cylinder tube bore size and cylinder being used are driven with relative high or low speed is determined as a condition. Select the cylinder's theoretical reference speed using the table below as a reference.

Degree of cylinder speed	Theoretical reference speed(mm/s)
Low speed	250
Medium speed	500
High speed	750
Ultra high speed	1,000

Refer to the table on component selection guide -1 on the next page to select the corresponding cylinder tube bore and appropriate standard system no. for the theoretical reference speed.

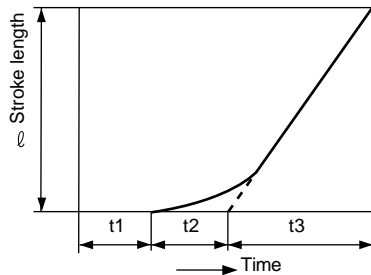
Explanation of technical terms

● Theoretical reference speed shows the degree of speed of a cylinder, and is expressed by the following formula. (This value is approximately equal to the speed when there is no load. When load is applied, speed drops considerably.)

$$V_o = 1920 \times \frac{S}{A} \times 2445 \times \frac{S}{D^2} \text{ (1)}$$

- Vo : theoretical reference speed mm/s
- A : cylinder cross-section areas (cm²)
- S : composite effective sectional area of a circuit (exhaust side)
- D : cylinder bore size (cm)

When expressed as a graph, the theoretical reference speed is a speed in the range where the cylinder moves at a uniform speed, and



$$V_o = \frac{l}{t_3} \text{ (A/s)}$$

- t1: time until movement starts
- t2: time of primary delay
- t3: time of constant movement
- l : stroke length

● Note: t1, t2 varies depending on the load. These times can be neglected when there is no load.

● Required flow rate: Momentary flow rate passed when the cylinder operates at Vo speed. This is expressed with the equation below. In the table, this is the value when P equals 0.5 MPa. The required flow rate is required for selecting the clean air system.

$$Q = \frac{A v_o (P + 0.101) \times 60}{0.101 \times 10^4} = \left\{ \frac{A v_o (P + 1.03) \times 60}{1.03 \times 10^4} \right\} \text{ (2)}$$

- Q: Required flow (RX) (ANR)
- P: Supply pressure (MPa)

● Required effective sectional area: Composite effective sectional area for the exhaust circuit required for moving the cylinder at Vo speed. (Composite effective sectional area of valve, speed control valve, silencer or piping)

● Appropriate standard system: A combination of the optimum value, speed controller, silencer and port size required to operate the cylinder at Vo speed. The combination in the table is for a piping length of 1m. The combination in the table is for a piping length of 1 m.

How to calculate flow

The following formula shows the calculation using practical units.

Refer to the table of [effective sectional area] on the following page for acoustic velocity zone.

(1) PH ≤ 1.89PL (subsonic zone)

$$Q = 227 \times S \times \sqrt{PL \times (PH - PL)} \times \sqrt{\frac{273}{T_H}}$$

$$(Q = 22.2 \times S \times \sqrt{PL \times (PH - PL)} \times \sqrt{\frac{273}{T_H}})$$

① PH ≥ 1.89PL (acoustic velocity zone)

$$Q = 113 \times S \times PH \times \sqrt{\frac{273}{T_H}}$$

$$(Q = 11.1 \times S \times PH \times \sqrt{\frac{273}{T_H}})$$

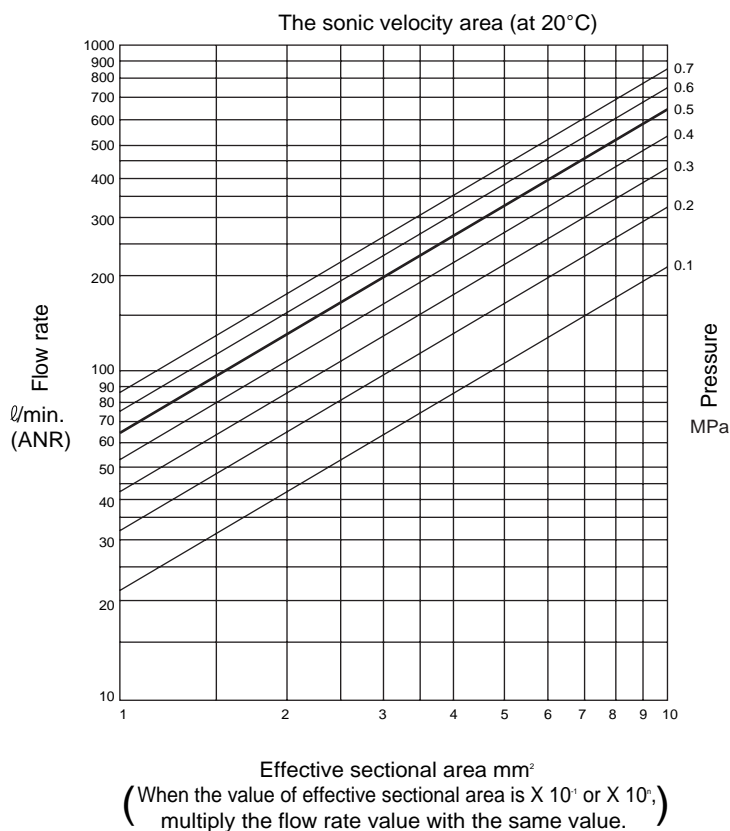
- Q: flow ℓ /min(ANR)
- Effective sectional area of S: needle valve mm²
- PH: Upstream side pressure MPa abs
- PL: Down stream side pressure MPa abs
- TH: upstream side absolute temperature K
- Note) Absolute pressure(MPa)=Working pressure+0.101(MPa)

<Component selection guide-1>

Cylinder Bore size (mm)	Theoretical criteria Speed (mm/s)	Required flow (l/min) (ANR)	Required effective sectional area (mm ²)	Proper standard system No.		
				1. Common exhaust	2. Atmospheric release exhaust	3. Silencer assembly exhaust
φ6	(500)	-	(0.1)	A1	A2	A3
φ10	(500)	-	(0.2)	A1	A2	A3
φ16	(500)	-	(0.5)	A1	A2	A3
φ20	250	29	0.5	A1	A2	A3
	400	46	1.6	B1	A2	B7
φ25	250	44	0.8	A1	A2	A3
	400	70	1.9	B1	B4	B7
φ30	250	64	1.1	A1	A2	A3
	400	100	2.8	B2	B4	B7
φ32	250	73	1.3	A1	A2	A3
	400	120	3.1	B2	B5	B8
φ40	250	110	1.7	B1	B4	B7
	500	230	3.3	B2	B5	B8
	750	340	5.0	B3	B6	B9
	1000	450	6.6	-	B6	-
φ50	250	280	2.6	B1	B4	B7
	500	560	5.2	B3	B6	B9
	750	840	7.7	-	-	-
	1000	1100	10.4	-	-	-
φ63	250	450	4.1	B3	B5	B9
	500	910	8.2	-	-	-
	750	1400	12.3	-	-	-
	1000	1800	16.4	-	-	-

*Refer to P.71 for system no.

<Effective sectional area>



<Clean air system components>

Clean air system components

Part name	Model no.	Port size	Maximum flow rate (l/min. atmospheric pressure conversion)
F/R/L kit	C1000-6	Rc1/8	450
	C1000-8	Rc1/4	630
	C3000-8	Rc1/4	1280
	C3000-10	Rc3/8	1750
	C4000-8	Rc1/4	1430
	C4000-10	Rc3/8	2400
F/R unit	C4000-15	Rc1/2	3000
	W1000-6	Rc1/8	830
	W1000-8	Rc1/4	1150
	W3000-8	Rc1/4	2150
	W3000-10	Rc3/8	2430
	W4000-8	Rc1/4	2500
Air filter (F)	W4000-10	Rc3/8	4350
	W4000-15	Rc1/2	4750
	F1000-6	Rc1/8	460
	F1000-8	Rc1/4	610
	F3000-8	Rc1/4	1230
	F3000-10	Rc3/8	1500
Regulator (R)	F4000-8	Rc1/4	1320
	F4000-10	Rc3/8	2140
	F4000-15	Rc1/2	3000
	R1000-6	Rc1/8	770
	R1000-8	Rc1/4	1350
	R3000-8	Rc1/4	2000
Lubricator (L)	R3000-10	Rc3/8	2600
	R4000-8	Rc1/4	2500
	R4000-10	Rc3/8	4400
	R4000-15	Rc1/2	5000
	L1000-6	Rc1/8	550
	L1000-8	Rc1/4	700
L3000-8	Rc1/4	1100	
L3000-10	Rc3/8	2250	
L4000-8	Rc1/4	1000	
L4000-10	Rc3/8	1700	
L4000-15	Rc1/2	2700	

Note. Max. flow rate for FRL, FR and R is measured at primary pressure=0.7 MPa, setting pressure=0.5MPa and pressure drop=0.1MPa. For air filter, primary pressure=0.7 MPa, pressure drop=0.02 MPa, and for lubricator, primary

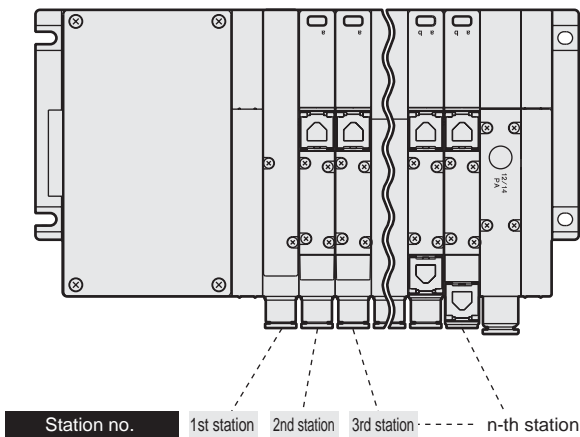
Common gland type (wiring method T10)

Notes when wiring

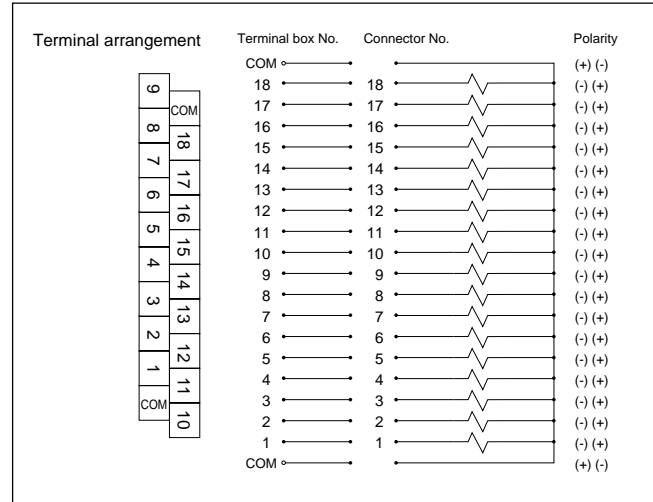
[Notes on common gland type T10]

- (1) With the common gland type, common wires are treated inside beforehand. Wire the common at the contact section when using the independent contact PLC output unit.
- (2) Check the correspondence of the number of stations and solenoid positions to prevent incorrect wiring. (Refer to the table below.)
- (3) This cannot be used if the number of solenoid points exceeds 18 points.
- (4) Manifold stations are set in order from the left with the piping port facing you.
- (5) Voltage could drop due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.

T10 (left specifications)



Internal wiring of wiring method T10 (Max. solenoid no. 18 points)



Terminal array of wiring method T10 (example)

*: The numbers in the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. The alphabetic characters a and b indicate the a side solenoid and the b side solenoid.

Terminal No.

COM	18	17	16	15	14	13	12	11	10
9	8	7	6	5	4	3	2	1	COM

Maximum station number differs depending on the model.
Check the individual specifications.

(standard wiring)

(MF station number; up to 18 stations)

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

(MF station number; up to 9 stations)

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

(Up to 18 stations)

Terminal box No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Void)	(Void)	(Void)	(Void)	9b	9a	8b	8a	7b
Terminal box No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	7a	6a	5b	5a	4b	4a	3a	2a	1a	COM

(double wiring)

(MF station number; up to 9 stations)

Terminal box No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Void)	9a	(Void)	8a	(Void)	7a	(Void)	6a	(Void)
Terminal box No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	(Void)	4a	(Void)	3a	(Void)	2a	(Void)	1a	COM

(MF station number; up to 9 stations)

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

(Up to 18 stations)

Terminal box No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	9b	9a	8b	8a	7b	7a	(Void)	6a	5b
Terminal box No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	(Void)	3a	(Void)	2a	(Void)	1a	COM

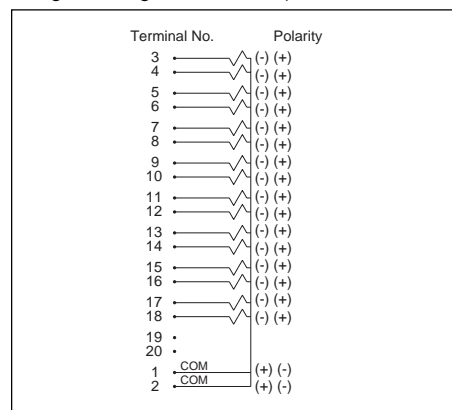
Multi-connector type (wiring method T20)

Notes when wiring

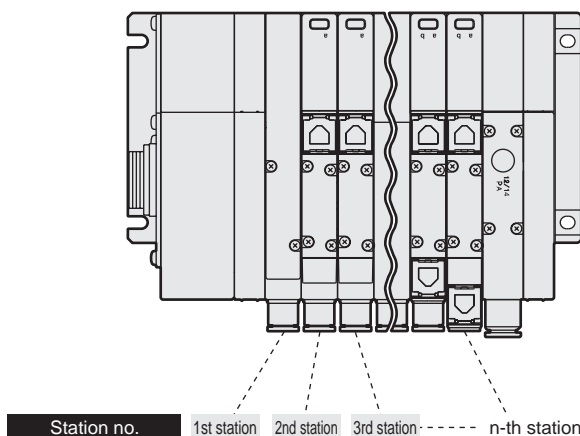
[Notes for multi-connector type(T20)]

- (1)With the common gland type, common wires are treated inside beforehand.
Wire the common at the contact section when using the independent contact PLC output unit.
- (2)Check the correspondence of the number of stations and solenoid positions to prevent incorrect wiring.
(Refer to the table below.)
- (3)This cannot be used if the number of solenoid points exceeds 16 points.
- (4)Manifold stations are set in order from the left with the piping port facing you.
- (5)Voltage could drop due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.

Internal wiring of wiring method T20 (Max. solenoid no. 16 points)



T20 (left specifications)



Terminal array of wiring method T20 (example)

*: The numbers in the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. The alphabetic characters a and b indicate the a side solenoid and the b side solenoid.

Maximum station number differs depending on the model.

Check the individual specifications.

T20 is available only in double wiring.

(double wiring)

(MF station number; up to 8 stations)

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

● Single solenoid

(MF station number; up to 8 stations)

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

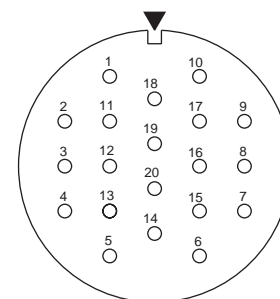
● Double solenoid

(MF station number; up to 8 stations)

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

● Mix
(Single and double mixture)

Terminal No.



D sub-connector type (wiring method T30)

Notes when wiring

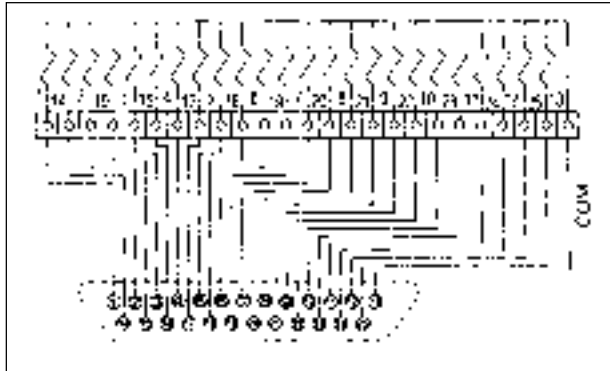
[T30 connector]

Connectors used for T30 wiring method are generally called D-sub connectors. These are commonly used for FA and OA devices. The 25P type is the connector designated in RS-232-C Standards that apply to personal computer communication functions. Manifold stations are set in order from the left with the piping port facing you.

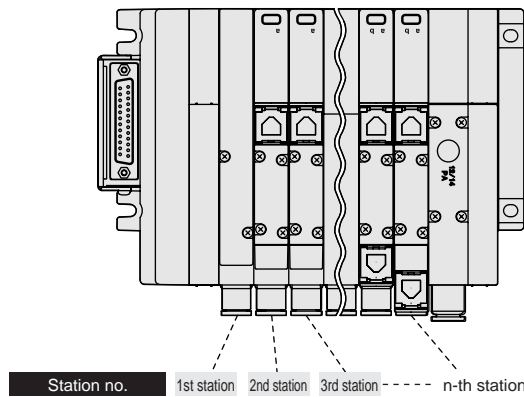
[Notes on connector type T30]

- (1) The PLC output unit's signal array and valve signal array must match.
- (2) Power source is 24 VDC and 12 VDC dedicated.
- (3) The voltage may drop due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.

Internal wiring of wiring method T30 (Max. solenoid no. 24points)



T30 (left specifications)



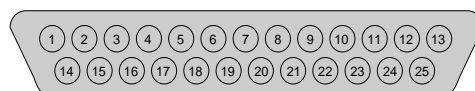
Connector pin array of wiring method T30 (example)

*: The numbers in the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. The alphabetic characters a and b indicate a and b side solenoids.

Maximum station number differs depending on the model.

Check the individual specifications.

Connector pin No.



(standard wiring)

● Single solenoid

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.	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)

● Double solenoid

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	

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	

● Mix

(Single and double mixture)

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	

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.	(Void)	(Void)	3b	4b	(Void)	(Void)	7b	(Void)	(Void)	(Void)	11b	12b	

Flat cable connector type (wiring method T51)

Notes when wiring

[T51 connector]

Connectors used for wiring method T51 conforms to MIL standards (MIL-C-83503)

Wiring is simplified by flat cable pressure welding.

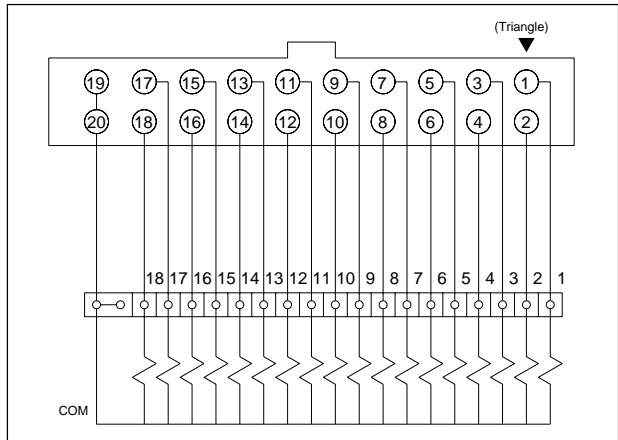
Pin no. is assigned differently based on the PLC maker, but the function assignment is the same. When wiring, refer to the connector position or the triangle(▼) in the table below. Either for plug or socket, match the triangle (▼) .

Viewed from b side solenoid (cap side for single solenoid), station no. is set from left.

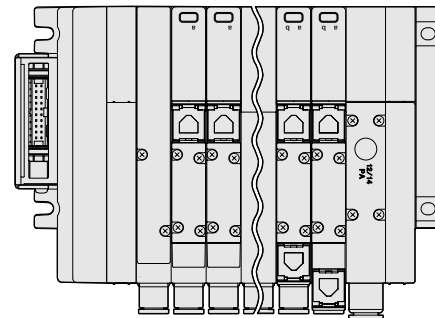
[Notes on connector type]

- (1)The PLC output unit's signal array and valve signal array must match.
- (2)power source is DC24V and DC12 V dedicated.
- (3)T51 type is driven by a common output unit.
- (4)If this manifold is connected to an input unit, it will affect peripheral components as well as this valve itself. Do not connect to an input unit in any case as it may lead to failure. Always connect this manifold to an output unit.
- (5)Voltage could drop due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.

Internal wiring of wiring method T51 (Max. solenoid no. 18 stations.)



T51(left specifications)

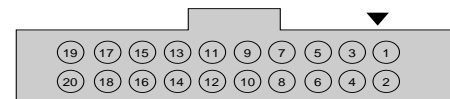


Station no. 1st station 2nd station 3rd station n-th station

Connector pin array of wiring method T51 (example)

*: The numbers in the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. The alphabetic characters a and b indicate a and b side solenoids. Maximum station number differs depending on the model. Check the individual specifications.

Connector pin No.



(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

- Single solenoid

(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	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)

- Double solenoid

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

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

- Mix
(Single and double mixture)

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

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	(Void)	(Void)	7b	(Void)	(Void)	4b	3b	(Void)	(Void)

Flat cable connector type (wiring method T53)

Notes when wiring

[T53 connector]

The connector used for the wiring method T53 is MIL standards. Compliant is made (MIL-C-83503).

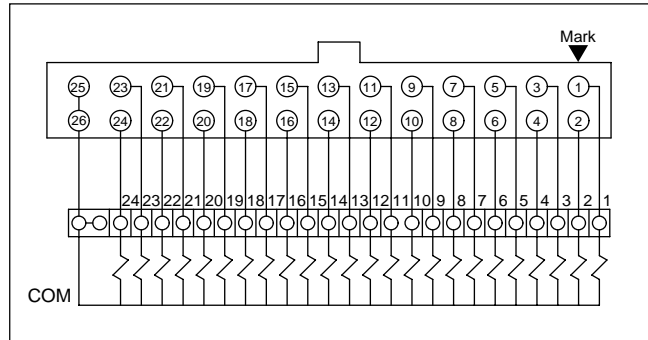
Wiring is simplified by flat cable pressure welding. Pin no. is assigned differently based on the PLC maker, but the function assignment is the same. When wiring, refer to the connector position or the triangle(▼) in the table below. Either for plug or socket, match the triangle (▼).

Viewed from b side solenoid (cap side for single solenoid), station no. is set from left.

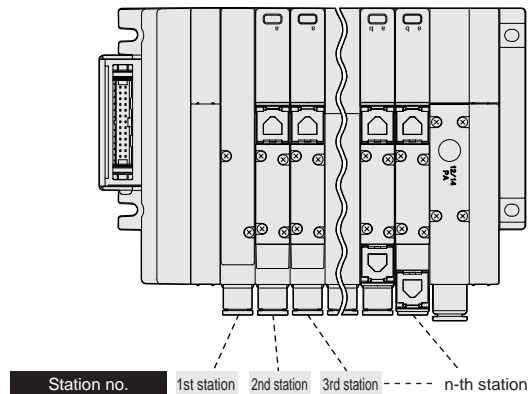
[Notes on connector type T53]

- (1) Signal array of the PLC output unit and the signal array of the valve side must match.
- (2) Power source is DC24V and DC12V only.
- (3) T53 type is driven by a common output unit.
- (4) Connecting this manifold to an input unit will affect not only this but other components as well, resulting in failure of many components. Always connect an output unit to this manifold.
- (5) Voltage could drop due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.

Internal wiring of wiring method T53 (Max. solenoid no. 24 stations.)



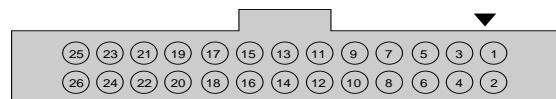
T53 (left specifications)



Connector pin array of wiring method T53 (example)

*: The numbers in the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. The alphabetic characters a and b indicate a and b side solenoids. Maximum station number differs depending on the model. Check the individual specifications.

Connector pin No.



(standard wiring)

(double wiring)

● For single solenoid valve

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

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	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)

● For double solenoid valve

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

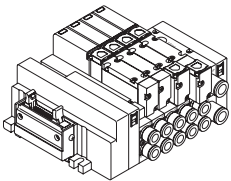




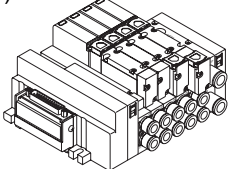
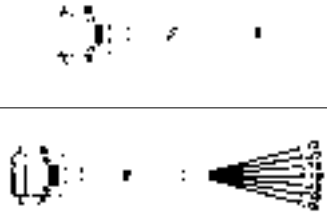
Pin No.	25	23	21	19	17	15	13	11	9	7	5	3	1
Valve No.	COM	12a	11a	10a	9a	8a	7a	6a	5a	4a	3a	2a	1a
Pin No.	26	24	22	20	18	16	14	12	10	8	6	4	2
Valve No.	COM	12b	11b	10b	9b	8b	7b	6b	5b	4b	3b	2b	1b

● For mix (single and double mixture)

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

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	(Void)	(Void)	(Void)	9b	8b	7b	(Void)	5b	4b	(Void)	(Void)	(Void)

Examples of wiring (recommended combinations) - Use the products with the following combinations

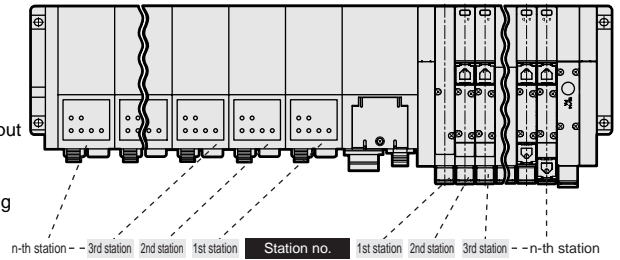
Wiring methods	Example of connection cable	PC and related products		
		Maker	PC	Connection cable
Flat cable connector (T51) 		OMRON Company	Type C200H-OD215 Type C500-OD415CN	Type G79-*C
			Type C500-OD213	Type 79-0*DC-*
		MITSUBISHI Company	AY42 Power voltage 0 to + 10%	40P;flat cable connector and interface OPC-31, 20P;connected by flat cable connector
		MATSUSHITA ELECTRIC WORKS LTD. Company	AFP33484	AY15133 to 7
			AFP53487	AY15223 to 7
D sub-connector (T30) 				With D sub-connector Cable (Refer to page 65 for details and cable model no.)

*: Set the valve drive power voltage with the voltage drop of the PLC and flat cable in consideration.

Serial transmission type: Wiring method

T8* serial transmission type

- Refer to the table below since slave unit I/O no. depends on the PLC manufacturer.
- The relation among the slave unit I/O no. and manifold solenoid and I/O block is shown on the table below.
- Viewed from piping port, solenoid valve station no. is set from left regardless of the position of wiring block.
- I/O block station no. is set from serial transmission slave unit side. If input block and output block are mixed, input blocks are placed on slave unit side before output blocks.
- If there is an input setting, a sensor device can be connected using the input block.
- If solenoid number is less than output no. an external component can be connected using output block.
- The working power is 24 VDC .
- A slave unit is utilized for each communication system. Contact CKD for the specifications on the usable PLC models, host unit models and communication systems.(Refer to 84 page.)
- Each connector (power supply/communication) must be fixed tightly. Also, close the switch after setting address, etc.(Recommended tightening torque 0.3N·m)



Serial transmission slave unit I/O No. corresponding to PLC address No.

(1) For hexadecimal notation

Serial transmission slave unit 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
CC-Link DeviceNet	Output dedicated type	Y0	Y01	Y02	Y03	Y04	Y05	Y06	Y07	Y08	Y09	Y0A	Y0B	Y0C	Y0D	Y0E	Y0F	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y1A	Y1B	Y1C	Y1D	Y1E	Y1F
	I/O mixture type	X00	X01	X02	X03	X04	X05	X06	X07	X08	X09	X0A	X0B	X0C	X0D	X0E	X0F	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y1A	Y1B	Y1C	Y1D	Y1E	Y1F
AS-i	I/O mixture type	ASI 1								ASI 2																							
		X00	X01	X02	X03	Y00	Y01	Y02	Y03	X00	X01	X02	X03	Y00	Y01	Y02	Y03																




(2) For decimal notation

Serial transmission slave unit 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
CC-Link DeviceNet	Output dedicated type	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y0	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1
	I/O mixture type	X0	X0	X0	X0	X0	X0	X0	X0	X0	X0	X0	X0	X0	X0	X0	X0	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1
AS-i	I/O mixture type	ASI 1								ASI 2																							
		X0	X0	X0	X0	Y0	Y0	Y0	Y0	X0	X0	X0	X0	Y0	Y0	Y0	Y0																

X** shows input, Y** shows output.

Input/output point numbers corresponding to wiring method T8* I/O numbers

Type of slave unit	Max. input no. Input block Quantity	Max. output no. Output block Quantity	Solenoid Point	Serial transmission slave unit 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	
· T8G1 (CC-Link) · T8D1 (DeviceNet) (0 point input/16 points output)	-	16 points		s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16																	
	1 unit (4 points)	12 point	16 points	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	1-0	1-1	1-2	1-3													
	2 unit (8 points)	8 point	8 point	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3									
· T8G2 (CC-Link) · T8D2 (DeviceNet) (0 point input/32 points output)	-	32 points		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	
	1 unit (4 points)	28 points	16 points	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	1-0	1-1	1-2	1-3	
	2 unit (8 points)	24 points	8 point	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	
	3 unit (12 points)	20 points	8 point	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3	
· T8G7 (CC-Link) · T8D7 (DeviceNet) (16 points input/16 points output)	-	16 points		1-0	1-1	1-2	1-3													s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	
	1 unit (4 points)	12 points	16 points	1-0	1-1	1-2	1-3													s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	
	2 unit (8 points)	8 points	8 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3									s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	
	1 unit (4 points)	12 points	16 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3									s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	
	2 unit (8 points)	8 points	8 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3					s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	
	3 units (12 points)	8 points	8 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3					s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	
· T8MA (AS-i) (4 point input/4 point output)	-	4 points																		s1	s2	s3	s4													
	1 unit (4 points)	4 points	4 points	1-0	1-1	1-2	1-3													s1	s2	s3	s4													
	2 units (8 points)	4 points	4 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3					s1	s2	s3	s4	2-0	2-1	2-2	2-3	s5	s6	s7	s8					
· T8M6 (AS-i) (8 point input/8 point output)	-	8 point																		s5	s6	s7	s8													
	1 unit (4 points)	4 points	4 points	1-0	1-1	1-2	1-3													s5	s6	s7	s8													
	2 units (8 points)	4 points	4 points	1-0	1-1	1-2	1-3	2-0	2-1	2-2	2-3	3-0	3-1	3-2	3-3					s5	s6	s7	s8	2-0	2-1	2-2	2-3	s5	s6	s7	s8					

-  : Input block
-  : Output block
-  : Solenoid output

*The numbers in the input/output block area indicate the "station number counting from the serial transmission slave unit side-connector number".

Valve no. array compatible with solenoid output no. of wiring method T8*. (example)

*The numbers of the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. The alphabetic characters a and b indicate a and b side solenoids. Maximum station number depends on the model. Check the individual specifications.

<Standard wiring> ● For single solenoid valve (max. 16 stations)

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																		

● For 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

● For mix(single and double mixture)(max. 16 stations)

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> ● For 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	(Void)	2a	(Void)	3a	(Void)	4a	(Void)	5a	(Void)	6a	(Void)	7a	(Void)	8a	(Void)	9a	(Void)	10a	(Void)	11a	(Void)	12a	(Void)	13a	(Void)	14a	(Void)	15a	(Void)	16a	(Void)


● For double solenoid valve


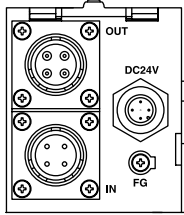
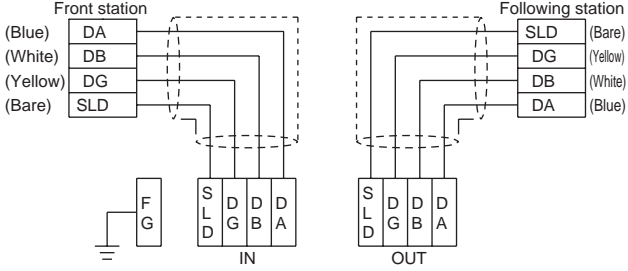

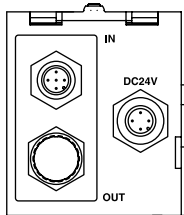
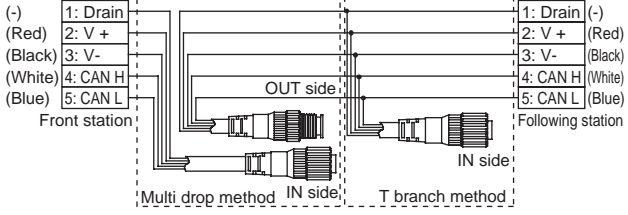

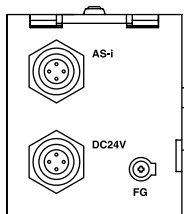
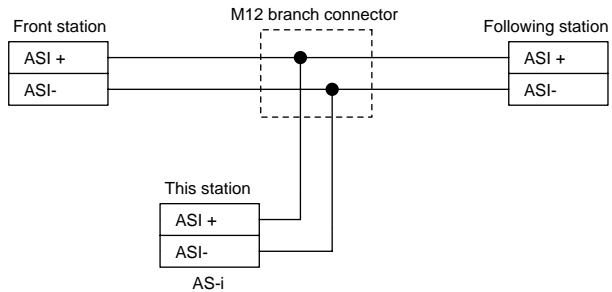
Solenoid output No	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16	s17	s18	s19	s20	s21	s22	s23	s24	s25	s26	s27	s28	s29	s30	s31	s32
Valve No	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	6a	6b	7a	7b	8a	8b	9a	9b	10a	10b	11a	11b	12a	12b	13a	13b	14a	14b	15a	15b	16a	16b

● For mix (single and double mixture)

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	(Void)	2a	(Void)	3a	3b	4a	4b	5a	(Void)	6a	(Void)	7a	7b	8a	(Void)	9a	(Void)	10a	(Void)	11a	11b	12a	12b	13a	(Void)	14a	(Void)	15a	15b	16a	(Void)

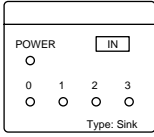
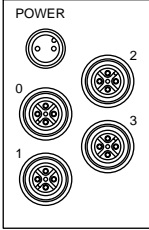
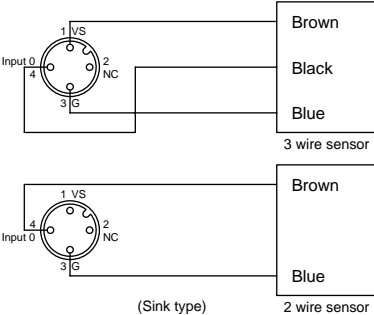
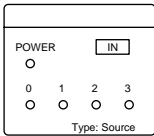
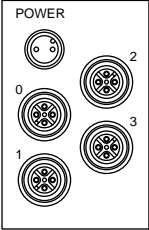
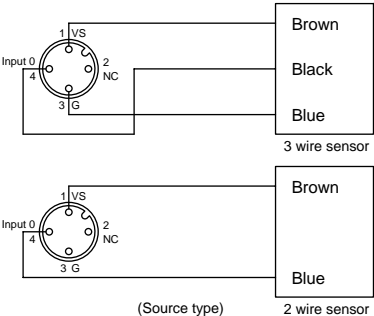
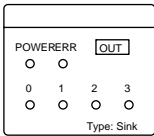
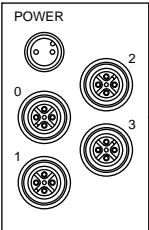
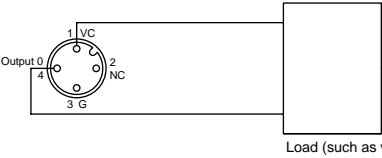
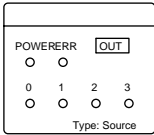
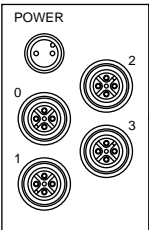
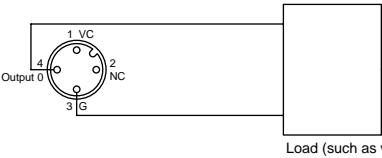
W4G2 Series

Technical data  notes when wiring; serial transmission type

Model no.	LED display	Wiring method														
<p>T8G*</p>	<div style="text-align: center;">  </div> <table border="1" data-bbox="199 571 518 817"> <thead> <tr> <th>LED name</th> <th>Display content</th> </tr> </thead> <tbody> <tr> <td>PW1</td> <td>Lighting during unit power supply ON</td> </tr> <tr> <td>PW2</td> <td>Lighting during valve power supply ON</td> </tr> <tr> <td>SD</td> <td>Lights on when transmitting data.</td> </tr> <tr> <td>RD</td> <td>Lights on when receiving data.</td> </tr> <tr> <td>L RUN</td> <td>Lights on when receiving normal data. Lights on time over</td> </tr> <tr> <td>L ERR</td> <td>Lights on when transmission error occurs. Lights on time over <small>Lights on when station No. setting or transmission speed setting is incorrect. Flickers when station No. setting or transmission speed setting changes during process.</small></td> </tr> </tbody> </table>	LED name	Display content	PW1	Lighting during unit power supply ON	PW2	Lighting during valve power supply ON	SD	Lights on when transmitting data.	RD	Lights on when receiving data.	L RUN	Lights on when receiving normal data. Lights on time over	L ERR	Lights on when transmission error occurs. Lights on time over <small>Lights on when station No. setting or transmission speed setting is incorrect. Flickers when station No. setting or transmission speed setting changes during process.</small>	<div style="display: flex; justify-content: space-around;">   </div> <p>Front station (Blue) DA (White) DB (Yellow) DG (Bare) SLD</p> <p>Following station SLD (Bare) DG (Yellow) DB (White) DA (Blue)</p> <p>IN: S, D, D, D, A OUT: S, D, D, D, A</p> <p>F, G</p> <p>DC24V, IN, FG, OUT</p> <ul style="list-style-type: none"> ·Unit and valve power supply are separated. Supply the power from the connector for power supply.(Use a M12 connector.) ·Connect a CC-Link cable to the communication connector. (Use a CC-Link dedicated water proof connector.) ·The wiring side connector is not included. ·Refer to page 86 for connector pin layout. Pay extra attention since left and right will be reversed.
LED name	Display content															
PW1	Lighting during unit power supply ON															
PW2	Lighting during valve power supply ON															
SD	Lights on when transmitting data.															
RD	Lights on when receiving data.															
L RUN	Lights on when receiving normal data. Lights on time over															
L ERR	Lights on when transmission error occurs. Lights on time over <small>Lights on when station No. setting or transmission speed setting is incorrect. Flickers when station No. setting or transmission speed setting changes during process.</small>															
<p>T8D*</p>	<div style="text-align: center;">  </div> <table border="1" data-bbox="199 1355 518 1456"> <thead> <tr> <th>LED name</th> <th>Display content</th> </tr> </thead> <tbody> <tr> <td>MS</td> <td>State of slave unit shown</td> </tr> <tr> <td>NS</td> <td>State of network shown</td> </tr> <tr> <td>VALVE</td> <td>Lights on when valve power is ON.</td> </tr> </tbody> </table>	LED name	Display content	MS	State of slave unit shown	NS	State of network shown	VALVE	Lights on when valve power is ON.	<div style="display: flex; justify-content: space-around;">   </div> <p>Front station (-) 1: Drain (Red) 2: V + (Black) 3: V - (White) 4: CAN H (Blue) 5: CAN L</p> <p>Following station 1: Drain (-) 2: V + (Red) 3: V - (Black) 4: CAN H (White) 5: CAN L (Blue)</p> <p>OUT side, IN side</p> <p>Multi drop method, T branch method</p> <p>DC24V, IN, OUT</p> <ul style="list-style-type: none"> ·Unit and valve power supply is a separate power source. Supply the power from the connector for power supply. (Use a M12 connector) ·Connect a DeviceNet cable to the communication connector. (Use a connector with DeviceNet dedicated cable.) ·The wiring side connector is not included. ·Refer to page 87 for connector pin layout. Pay extra attention since left and right will be reversed. 						
LED name	Display content															
MS	State of slave unit shown															
NS	State of network shown															
VALVE	Lights on when valve power is ON.															
<p>T8M*</p>	<div style="text-align: center;">  </div> <table border="1" data-bbox="199 1915 518 2094"> <thead> <tr> <th>LED name</th> <th>Display content</th> </tr> </thead> <tbody> <tr> <td>AUX</td> <td>Lights when auxiliary power(valve power supply) ON.</td> </tr> <tr> <td>ASI1/ASI2</td> <td>Lights during normal communication Lights off when AS-I power is OFF Lights off when communication is in stopped state Blinks when address is "0"</td> </tr> <tr> <td>FAULT1/FAULT2</td> <td>Lights on when communication is in stopped state Lights off during normal communication Blinks when sensor power supply is overloaded</td> </tr> </tbody> </table>	LED name	Display content	AUX	Lights when auxiliary power(valve power supply) ON.	ASI1/ASI2	Lights during normal communication Lights off when AS-I power is OFF Lights off when communication is in stopped state Blinks when address is "0"	FAULT1/FAULT2	Lights on when communication is in stopped state Lights off during normal communication Blinks when sensor power supply is overloaded	<div style="display: flex; justify-content: space-around;">   </div> <p>Front station ASI + ASI -</p> <p>This station ASI + ASI - AS-i</p> <p>M12 branch connector</p> <p>Following station ASI + ASI -</p> <p>DC24V, FG, AS-i</p> <ul style="list-style-type: none"> ·Supply each power from AS-I and auxiliary power supply cables. ·AS-I and auxiliary power supplies (valve power supply) are required. ·Refer to page 88 for connector pin layout. 						
LED name	Display content															
AUX	Lights when auxiliary power(valve power supply) ON.															
ASI1/ASI2	Lights during normal communication Lights off when AS-I power is OFF Lights off when communication is in stopped state Blinks when address is "0"															
FAULT1/FAULT2	Lights on when communication is in stopped state Lights off during normal communication Blinks when sensor power supply is overloaded															

PLC table

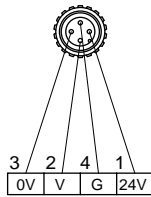
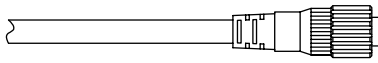
Model no.	Manufacturer (recommended)	Series	Communication system name	Host station model no.
T8G*	MITSUBISHI	MELSEC A Series MELSEC QnA Series MELSEC Q Series	CC-Link	AJ61BT11 AJ61QBT11 A1SJ61BT11 A1SJ61QBT11 QJ61BT11 (N)
	CC-Link institution (CLPA)	PLC, PC compatible with each CC-Link brand		Connect to each maker's CC-Link master
T8D*	OMRON	SYSMAC CS Series SYSMAC CJ Series SYSMAC CV Series SYSMAC α Series SYSMAC C200HS Series Others	DeviceNet	Type CS1W-DRM21 Type CJ1W-DRM21 Type CVM1-DRM21-V1 Type C200HW-DRM21-V1 Type ITNC-EI * 01-DRM (master integrated PLC) Type 3G8B3-DRM21 (VME board)
	TOYODA	PC3J/2J Series PC3JD PC2F/PC2FS		THK-5398 TIC-5642 (master integrated PLC) TFU-5359
	ODVA	PLC, PC and SBC that supports DeviceNet		Connect to DeviceNet host controller
T8M*	MITSUBISHI	AnS/A2US Series	AS-i	A1SJ71AS92
		Q2AS Series		NP1L-AS1
	FUJI ELECTRIC CORP. company	MICREX-SX Series		NJ-ASL
		FLEX-PC NJ Series		(CPU unit including)
		FLEX-PC NB6 Series		AS-i master unit
Others	Others			

Model no./I/O type	LED display	Wiring method								
Input block NW4G□2- IN- $\begin{matrix} N \\ K \\ P \\ B \end{matrix}$	<p>Sink type</p>  <table border="1"> <thead> <tr> <th>LED name</th> <th>Display content</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights on when supplying power for sensor</td> </tr> <tr> <td>0 to 3</td> <td>Lights on when each sensor output is ON</td> </tr> </tbody> </table>	LED name	Display content	POWER	Lights on when supplying power for sensor	0 to 3	Lights on when each sensor output is ON	  <p>(Sink type)</p> <ul style="list-style-type: none"> There are 2 types of power supply for sensor, one has the same specification as an unit power supply and the other supplies external power from a POWER connector. Either the sink or source input can be selected. Connector for the cable side sold separately. 		
	LED name	Display content								
POWER	Lights on when supplying power for sensor									
0 to 3	Lights on when each sensor output is ON									
<p>Source type</p>  <table border="1"> <thead> <tr> <th>LED name</th> <th>Display content</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights on when supplying power for sensor</td> </tr> <tr> <td>0 to 3</td> <td>Lights on when each sensor output is ON</td> </tr> </tbody> </table>	LED name	Display content	POWER	Lights on when supplying power for sensor	0 to 3	Lights on when each sensor output is ON	  <p>(Source type)</p> <ul style="list-style-type: none"> There are 2 types of power supply for sensor, one has the same specification as an unit power supply and the other supplies external power from a POWER connector. Either the sink or source input can be selected. Connector for the cable side sold separately. 			
LED name	Display content									
POWER	Lights on when supplying power for sensor									
0 to 3	Lights on when each sensor output is ON									
Output block NW4G□2- OUT- $\begin{matrix} N \\ K \\ P \\ B \end{matrix}$	<p>Sink type</p>  <table border="1"> <thead> <tr> <th>LED name</th> <th>Display content</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights on when power for external load is supplied</td> </tr> <tr> <td>ERR</td> <td>Lights on when protective circuit is operating</td> </tr> <tr> <td>0 to 3</td> <td>Lights on when each external load is ON</td> </tr> </tbody> </table>	LED name	Display content	POWER	Lights on when power for external load is supplied	ERR	Lights on when protective circuit is operating	0 to 3	Lights on when each external load is ON	  <p>(Sink type)</p> <ul style="list-style-type: none"> Supply the external load power from the POWER connector (24 VDC dedicated) Make sure that the sum of the external load current is 3A or less (1A/point or less) Either sink or source output can be selected. Connector for the cable side sold separately.
	LED name	Display content								
POWER	Lights on when power for external load is supplied									
ERR	Lights on when protective circuit is operating									
0 to 3	Lights on when each external load is ON									
<p>Source type</p>  <table border="1"> <thead> <tr> <th>LED name</th> <th>Display content</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights on when power is supplied to external load</td> </tr> <tr> <td>ERR</td> <td>Lights on when protective circuit is operating</td> </tr> <tr> <td>0 to 3</td> <td>Lights on when each external load is ON</td> </tr> </tbody> </table>	LED name	Display content	POWER	Lights on when power is supplied to external load	ERR	Lights on when protective circuit is operating	0 to 3	Lights on when each external load is ON	  <p>(Source type)</p> <ul style="list-style-type: none"> Supply the external load power from the POWER connector (24 VDC dedicated) Make sure that the sum of the external load current is 3A or less (1A/point or less) Either sink or source output can be selected. Connector for the cable side sold separately. 	
LED name	Display content									
POWER	Lights on when power is supplied to external load									
ERR	Lights on when protective circuit is operating									
0 to 3	Lights on when each external load is ON									

Water proof connector

CC-Link

● Power supply connector (female pin)



Pin No.	Signal name	Remarks
1	24V	Unit power supply + side
2	V	Valve power supply + side
3	0V	Unit power supply-side
4	G	Valve power supply-side

Recommended connector

Connector with cable

·Type XS2F-D421-* (single connector socket)

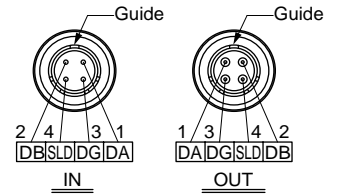
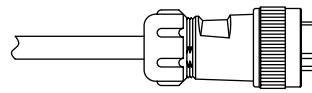
Assembly type connector

- Type XS2C-D4C* (crimping type)
- Type XS2C-D42* (solder type)
- Type XS2C-D4S* (screw wiring type)

OMRON

*Do not use a L type connector.

● Communication connector



Pin No.	Signal name	Conductor color
1	DA	Blue
2	DB	White
3	DG	Yellow
4	SLD	Shielded twist wire

FA-204-PF8 for recommended connector: IN (Female pin)
FA-204-PM8 for OUT (Male pin)

Mitsubishi Engineering

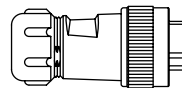
*The model above is compatible with cable with the outer diameter of $\phi 7.0$ to 8.5
Contact Mitsubishi Engineering if the cable outer diameter is different.

*Contact Mitsubishi Engineering for water proof connector with cable.

● Communication cable

Recommended cable (example)

- CC-Link dedicated cable FANC-SB
- Ver1.10 dedicated cable FANC-110SBH
- KURAMO ELECTRIC CO., LTD.



This slave unit is CC-Link Ver1.10 products.

Name: Terminal connector

Type: FA-CONW4P110E

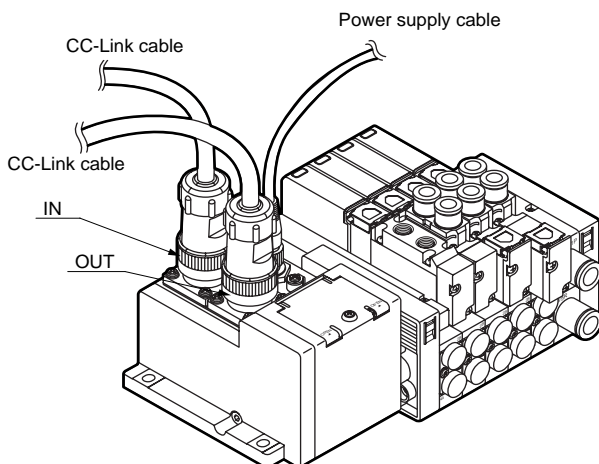
Manufacturer: Mitsubishi Engineering

*If this slave unit is connected to the furthest position from the master station, termination is required. Connect the terminal connector above to the OUT side. If you are using a dedicated high performance cable or T branch connection, replace the resistor in the terminal connector.

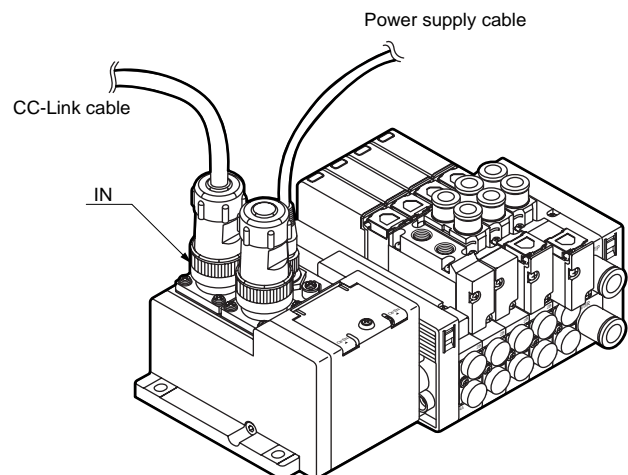
	Dedicated cable compatible with ver1.10	Dedicated high performance cable	T branch connection	
			Main line wiring	Branch line wiring
Terminating resistance	110 Ω (standard integrated)	130 Ω	110 Ω x 2 piece	Without terminating resistance

Connection method

● Intermediate station



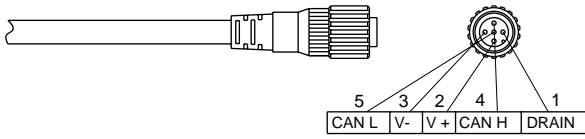
● Terminal station



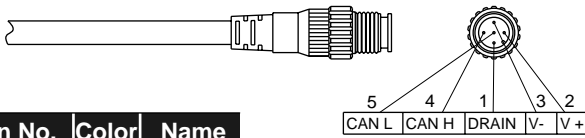
Water proof connector

DeviceNet

- Connector with cable for DeviceNet (female pin: IN)



- Connector with cable for DeviceNet (male pin: OUT)



Pin No.	Color	Name
1	-	DRAIN
2	Red	V +
3	Black	V-
4	White	CAN H
5	Blue	CAN L

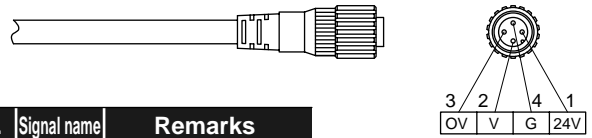
Recommended connector with cable

- Type DCA1-5CN**W1 (connector socket/plug with both sides cable)
- IN
- Type DCA1-5CN**F1 (connector with cable single side socket)
- OUT
- Type DCA1-5CN**H1 (connector with cable single side plug)

OMRON

*Do not use a L type connector.

- Connector for power supply (female pin)



Pin No.	Signal name	Remarks
1	24V	Unit power supply + side
2	V	Valve power supply + side
3	OV	Unit power supply-side
4	G	Valve power supply-side

Recommended connector

- Connector with cable
- Type XS2W-D421-* (both sides connector socket/plug)
- Type XS2F-D421-* (single connector socket)

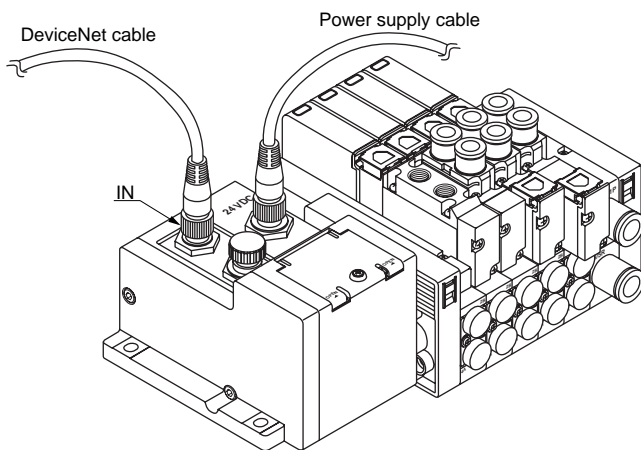
Assembly type connector

- Type XS2C-D4C* (crimping type)
- Type XS2C-D42* (solder type)
- Type XS2C-D4S* (screw wiring type)

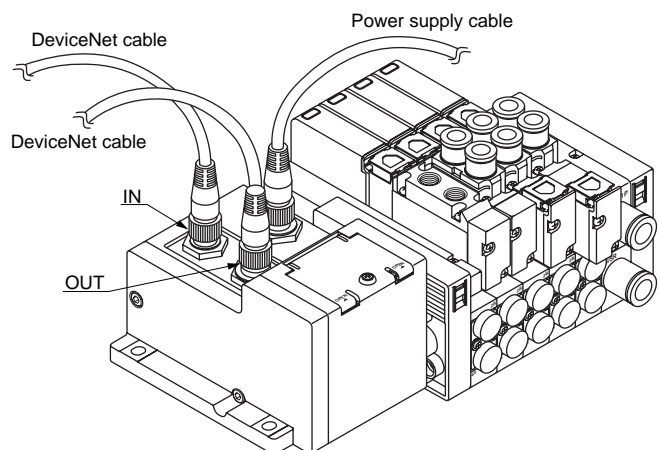
OMRON

Connection method

- If T branch is connected.



- If multi drop is connected.

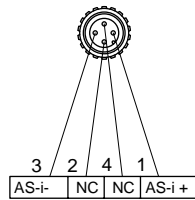
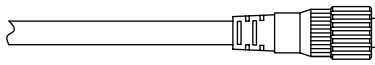


*When multi drop wiring a communication cable for DeviceNet, keep the rated communication power supply current that passes this slave unit less than 2A.

Water proof connector

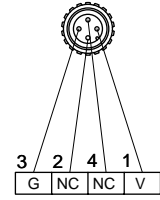
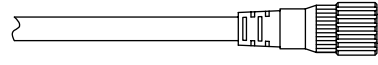
AS-i

● AS-i connector (female pin)



Pin No.	Signal name	Remarks
1	AS-i +	AS-i + side
2	NC	Not connected
3	AS-i-	AS-i-side
4	NC	Not connected

● Connector for valve (female pin)



Pin No.	Signal name	Remarks
1	V	Valve power supply + side
2	NC	Not connected
3	G	Valve power supply-side
4	NC	Not connected

Recommended connector

Connector with cable

- Type XS2W-D421-* (both sides connector socket/plug)
- Type XS2F-D421-* (single connector socket)

Assembly type connector

- Type XS2C-D4C* (crimping type)
- Type XS2C-D42* (solder type)
- Type XS2C-D4S* (screw wiring type)

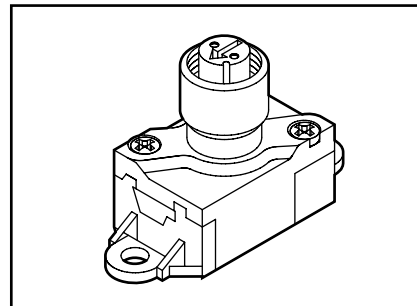
OMRON

*Do not use a L type connector.

*Dedicated M12 branch connector allows you to connect to AS-i cable. (Refer to the example below)
(Example: FUJI ELECTRIC 3RX9801-0AA00)

Connection method

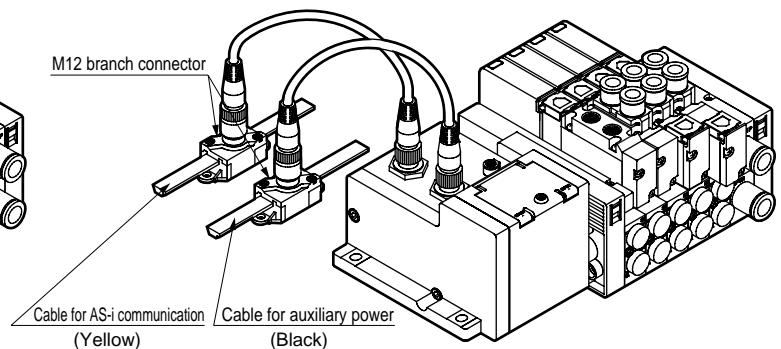
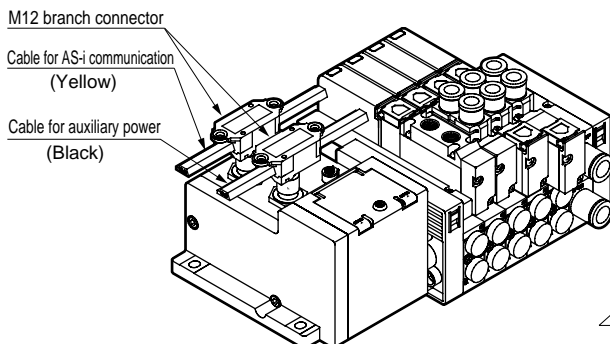
The AS-i communication cable and auxiliary power cable used with the AS-i system is connected to the slave unit using an M12 branch connector as shown below.



Branch connector for connecting AS-i communication cable to M12 connector

M12 branch connector
(Example: FUJI ELECTRIC 3RX9801-0AA00)

● When directly connecting M12 branch connector to the AS-i slave unit ● When connecting M12 branch connector to the AS-i slave unit using a water proof connector

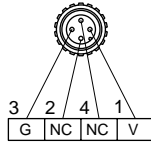
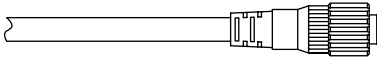


Water proof connector

I/O

① Input block

- External power connector (female pin)



Pin No.	Signal name	Remarks
1	V	External power + side
2	NC	Not connected
3	G	External power-side
4	NC	Not connected

Recommended connector

Connector with cable

- Type XS2F-D421-* (single connector socket)

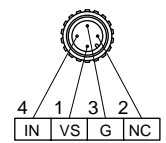
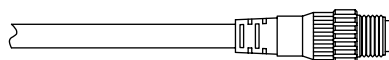
Assembly type connector

- Type XS2C-D4C* (crimping type)
- Type XS2C-D42* (solder type)
- Type XS2C-D4S* (screw wiring type)

OMRON

*Do not use a L type connector.

- Sensor side connector (male pin)



2 wire sensor

Pin No.	Signal name	Sink type	Source type
1	VS	Not connected	Sensor power supply + side
2	NC	Not connected	Not connected
3	G	Sensor power supply-side	Not connected
4	IN	Input signal	Input signal

3 wire sensor

Pin No.	Signal name	Sink/source type
1	VS	Sensor power supply + side
2	NC	Not connected
3	G	Sensor power supply-side
4	IN	Input signal

Recommended connector

Connector with cable

- Type XS2H-D421-* (single connector plug)

Assembly type connector

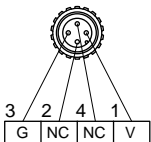
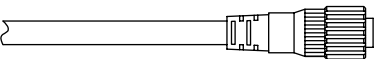
- Type XS2G-D4C* (crimping type)
- Type XS2G-D42* (solder type)
- Type XS2G-D4S* (screw wiring type)

OMRON

*Do not use a L type connector.

② Output block

- External power connector (female pin)



Pin No.	Signal name	Remarks
1	V	External power + side
2	NC	Not connected
3	G	External power-side
4	NC	Not connected

Recommended connector

Connector with cable

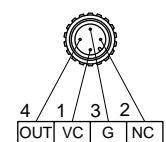
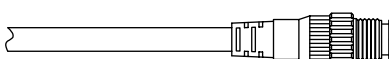
- Type XS2F-D421-* (single connector socket)

Assembly type connector

- Type XS2C-D4C* (crimping type)
- Type XS2C-D42* (solder type)
- Type XS2C-D4S* (screw wiring type)

*Do not use a L type connector.

- External load side connector (male pin)



Pin No.	Signal name	Sink type	Source type
1	VC	Power supply for load + side	Not connected
2	NC	Not connected	Not connected
3	G	Not connected	Power supply for load-side
4	OUT	Output signal	Output signal

Recommended connector

Connector with cable

- Type XS2H-D421-* (single connector plug)

Assembly type connector

- Type XS2G-D4C* (crimping type)
- Type XS2G-D42* (solder type)
- Type XS2G-D4S* (screw wiring type)

*Do not use a L type connector.

Wiring between wiring block and valve block (DC specifications)

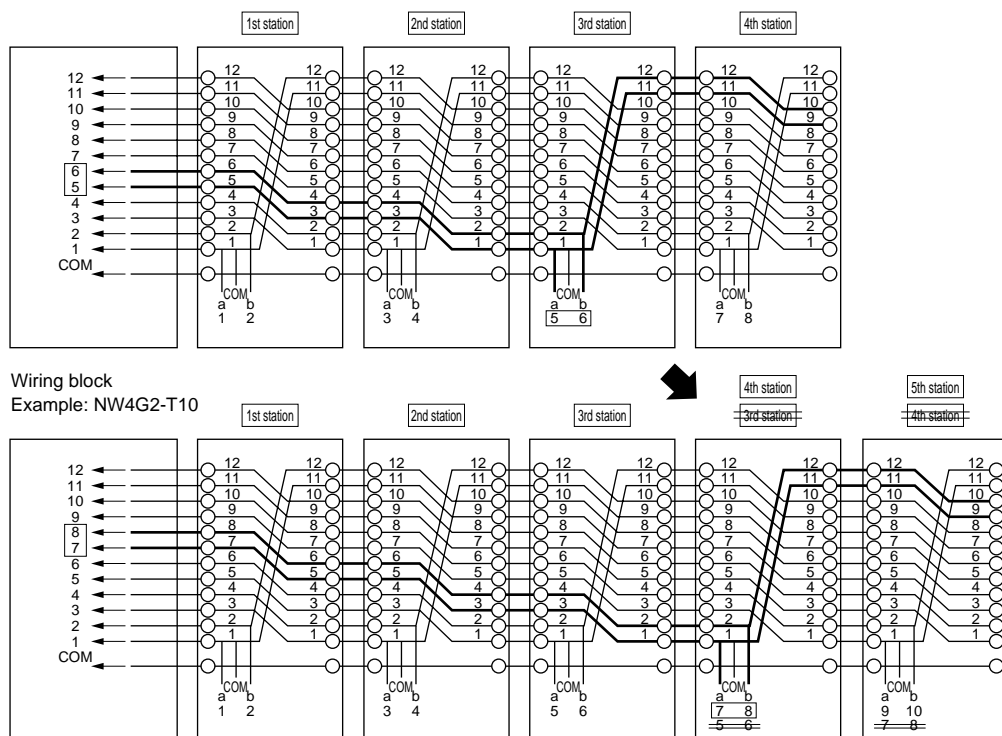
A part called dedicated wiring connector is incorporated in the valve block and supply and exhaust port, etc. With this structure, the wiring is completed when the block manifold is disassembled or assembled. No special wiring is required during disassembly or assembly. There is a regularity between wiring block connector pin numbers and wired valves, so check wiring for each wiring block, and connect between the valve and control unit. Pay special attention when expanding or reducing the number of valve blocks. An example of the wiring circuit for expansion is shown below.

Wiring example of circuit

The following diagrams show the wiring circuit for the MW4G2, which may differ from the actual specifications.

Double wiring

If one valve block is added between the second and third stations, the outputs assigned to No. 5 and No. 6 on the wiring block's common gland are automatically shifted to common gland No. 7 and No. 8, two solenoid places away.



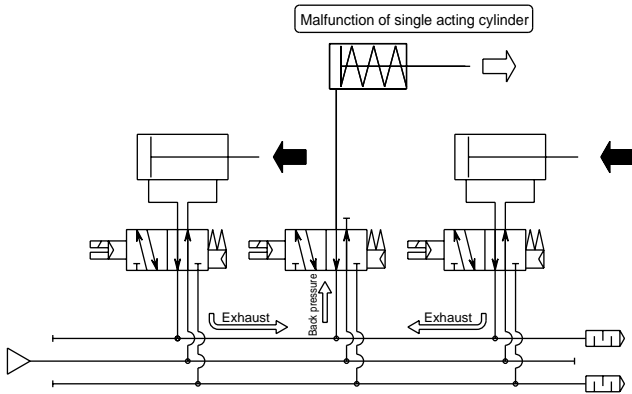
Standard

Common terminal box no. is shifted and assigned in the same manner as double wiring. Shifting differs according to the solenoid valve. When using one solenoid (2-position single), the common gland number shifts by one solenoid space. When using two solenoids (2-position double, 3-position), numbers are shifted by two solenoid spaces.

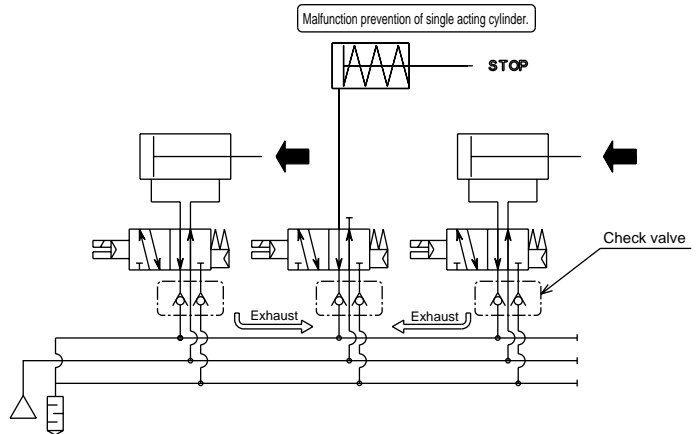
Check valve

Generally, when using the manifold, the single acting cylinder or the double acting cylinder connected to the A/B/R connection valve could malfunction because of the exhaust pressure led in by the other cylinder's drive. A integrated check valve can be selected to prevent this malfunction. However, it will not be equipped on all ports closed valves and PAB connection valves which will not have back pressure coming around.

Example of a pneumatic system that could malfunction

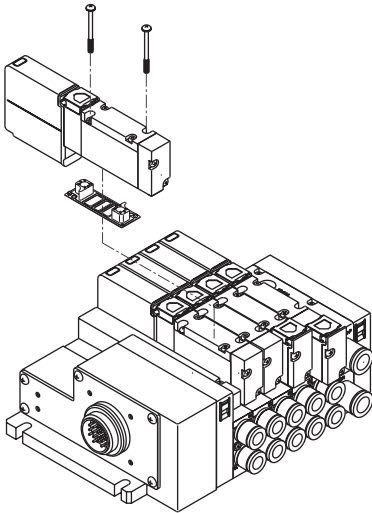


Pneumatics system with 4G series



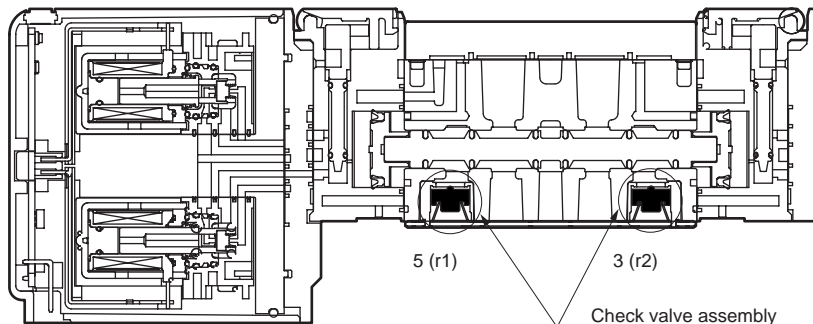
*Cylinder can not be operated manually when it is not pressurized.

Internal structure



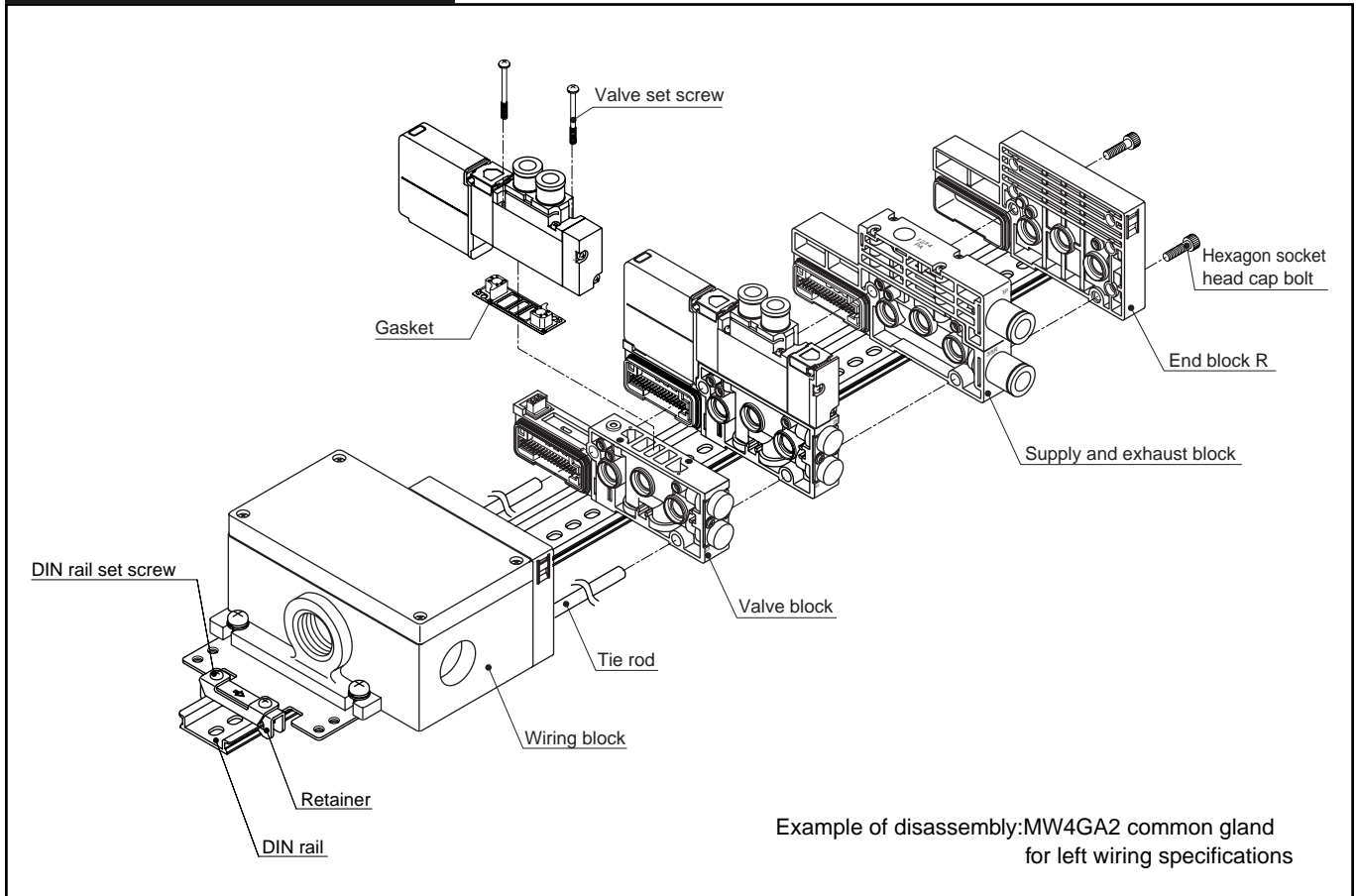
Check valve equipment standard specifications

Model no.	Flow path switchover	5 (R1)	3 (R2)
NW3GA210	NC	Selected	-
NW3GA2110	NO	-	Selected
NW4G 210	2-position single solenoid	Selected	Selected
NW4G 220	2-position double solenoid	Selected	Selected
NW4G 230	All ports closed	None	None
NW4G NDB 240	A/B/R connection	Selected	Selected
NW4G 250	P/A/B connection	None	None

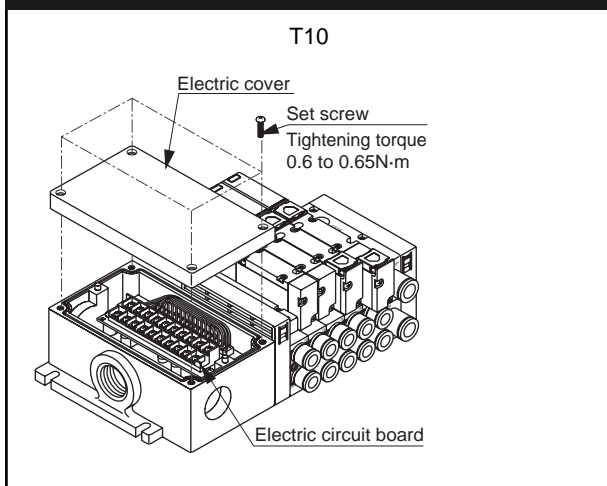


Exploded diagram of block manifold

*Refer to the next page for the exploded diagram of the serial transmission slave unit and input/output block.



To remove electric cover



Expanding manifold of valve lock

- (● Items in [] apply when mounted on DIN rail)
- [1] Loosen the DIN rail fixing screw of the retainer.
- (2) Remove the hexagon socket head cap bolt.
- (3) Remove the blocks up to the point you want to expand.
- (4) Add the tie rod for the expansion.
- (5) Mount the additional valve blocks.
- (6) Hold it down so that there are no gaps between the blocks, then joint with a hexagon socket head cap screw. (Tightening torque: 1.1 to 1.3N·m)
- [7] A. Catch the jaw of retainer on DIN rail.
B. Hold down the retainer in the direction if the arrow.
C. Tighten the DIN rail fixing screw. (Tightening torque: 1.2 to 1.6N·m)

Replace of valve

How to remove

- (1) Loosen the two set screws
- (2) Remove the valve from the valve block

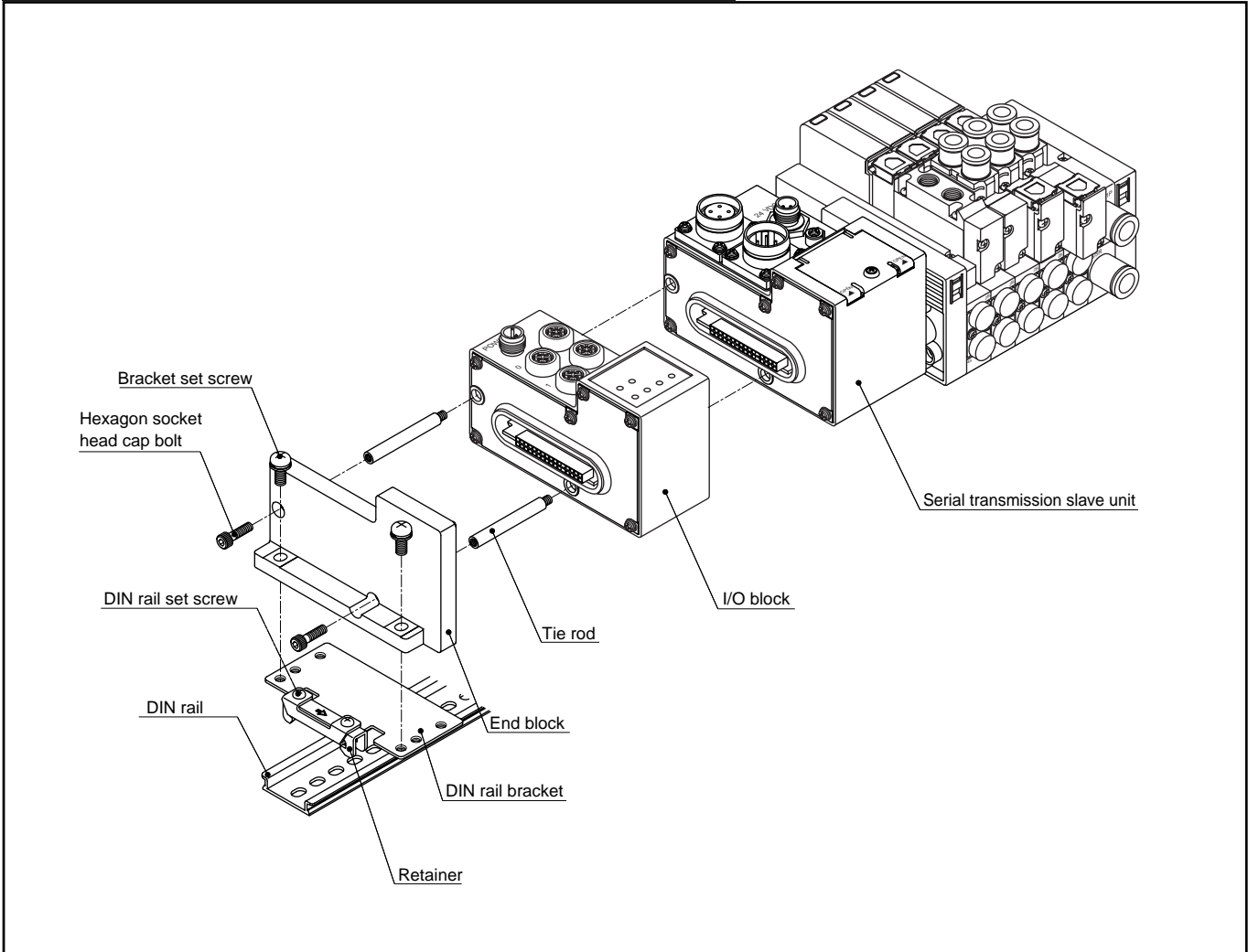
How to install

Install the valve following removal procedures in reverse. Refer to the table below for the set screw's recommended tightening torque.

Recommended tightening torque of valve set screw

	Size	Recommended tightening torque (N·m)
4G2	M2.5	0.25 to 0.30

Exploded diagram of serial transmission slave unit + I/O block



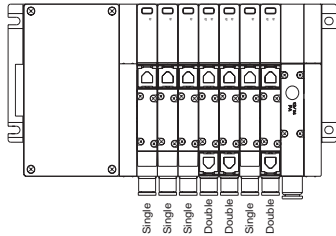
Expanding manifold of I/O block

(● Items in [] apply when mounted on DIN rail)

- [1] Loosen the DIN rail fixing screw of the retainer.
- [2] Remove the bracket mounting screws and DIN rail mounting bracket.
- [3] Remove the hexagon socket head cap bolt.
- [4] Remove the I/O blocks up to the point you want to expand.
- [5] Add the tie rod for the expansion.
- [6] Mount the additional I/O blocks.
 - (Rotary switch setting is required for the output block. Refer to the attached manual for details.)
- [7] Hold it down so that there are no gaps between the blocks, then joint with a hexagon socket head cap screw. (Tightening torque: 1.1 to 1.3N·m)
- [8] Attach the DIN rail mounting bracket with the set screw. (Tightening torque: 1.8 to 2.3N·m)
- [9] A. Catch the jaw of retainer on DIN rail.
 B. Hold down the retainer in the direction if the arrow.
 C. Tighten the DIN rail fixing screw. (Tightening torque: 1.2 to 1.6N·m)

Connection procedure of T10 electric circuit board (standard wiring)

Reduced wiring specification (T10) will change the compatibility between connectors and valves on the electric circuit board. When wiring the connector, always confirm the connector No. printed on the electric circuit board. Mixed wiring is shown as an example for the manifold configuration below.



Connection procedure of T10 electric circuit board (double wiring)

When using double wiring specifications, double solenoid wiring is used regardless of the installed solenoid valve's switching position class. The same wiring is used only for standard wiring and double wiring double solenoid.

Electric circuit board assembly

T10

Relations to valves

Wire in the order shown by the arrow

1) For single SOL
(MF station number; up to 18 stations)

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

2) For double SOL
(MF station number; up to 9 station)

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

3) For mix manifold
(Up to 18 station)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	(Void)	7b
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	7a	6a	5b	5a	4b	4a	3a	2a	1a	COM

Electric circuit board assembly

T10

Relations to valves

Wire in the order shown by the arrow

1) For single SOL
(MF station number; up to 9 stations)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Void)	9a	(Void)	8a	(Void)	7a	(Void)	6a	(Void)
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	(Void)	4a	(Void)	3a	(Void)	2a	(Void)	1a	COM

2) For double SOL
(MF station number; up to 9 station)

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

3) For mix manifold
(Up to 18 station)

Connector No.	COM	18	17	16	15	14	13	12	11	10
Valve No.	COM	(Void)	(Void)	(Void)	(Void)	(Void)	7b	7a	(Void)	6a
Connector No.	9	8	7	6	5	4	3	2	1	COM
Valve No.	5a	4b	4a	(Void)	3a	(Void)	2a	(Void)	1a	COM

*1 Only AC specifications require wiring when expanding.
 *Use a valve block with masking plate as a reserved block when specifications are expected to be changed on the AC specifications.

How to fill out manifold specifications

● Manifold model no. (example)

MW **4** GA2 **8** 0- **CX** - **T8G7** **W** **HY11** **D** - **6** - **3**

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Reduced wiring Ⓔ Terminal and connector pin Array Ⓕ Option Ⓖ Mount type Ⓗ Station number Ⓙ Voltage

Solenoid position 2 types or more
 Port size 2 types or more
 Serial transmission (CC-Link) (16 points input/16 points output)
 This is not the manifold station no.

Part name	Model no.	Layout																														Quantity			
		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				
I/O block (Page 59)	NW4GA2-IN- (N)- (K)		○																														1		
	NW4GA2-OUT- (N)-B	○																															1		
Wiring block (page 58)	NW4GA2-T (8G7)			○																													1		
With solenoid valve Valve block (Pages 7 to 10)	NW4GA2 (1) 0- (C4)				○																											1			
	NW4GA2 (2) 0- (C6)					○																										1			
	NW4GA2 (3) 0- (C4)						○																									1			
	NW4GA2 (1) 0- (C4)																																1		
	NW4GA2 (1) 0- (C4)																																	1	
	NW3GA2 (1) 0- (C4)																																	1	
NW3GA2 (11) 0- (C4)																																	1		
With masking plate Valve block (page 53)	NW4G2-MPS																																1		
	NW4G2-MPD																																1		
Air supply spacer (Pages 59 to 60)	W4G2-P																																2		
	W4G2-P																																		
Exhaust spacer (Pages 59 to 60)	W4G2-R																																		
	W4G2-R																																		
Supply and exhaust block (Page 55)	NW4G2-Q (8L)- (8L)- (8L)																																		
	NW4G2-Q (8L)- (8L)- (8L)																																		
	NW4G2-Q (8L)- (8L)- (8L)																																		
	NW4G2-Q (8L)- (8L)- (8L)																																		
Partition block (Page 55)	NW4G2- (SA)																																		1
	NW4G2- ()																																		
	NW4G2- ()																																		
End block R (page 55)	NW4G2- (E) R																																		1
DIN rail	L7 = () (How to calculate Page length 95)	Blanking plug		Silencer		Tag plate		Cable clamp		Water proof plug		Attached Part																							
		GWP4-B	GWP6-B	SLW-H8	A	W4G-SCL-18A	W4G-SCL-18B	W4G-XS2-12																											
		GWP8-B	GWP10-B	SLW-H10		Applicable cable outer diameter φ 14.5 to 16.5	Applicable cable outer diameter φ 16.5 to 18.5																												
		Cable with D-sub connector (refer to page 65)		Multi cable with connector		Only multi-connector																													
		N4T-CABLE-DO- ()		W4G-RMC- ()		W4G2-RM21WTP- ()																													
If blanking plugs and silencers are required, fill in the quantity in the size section.												I/O block Indicate quantity if required.																							

Preparing the manifold specifications

- Fill in from the left facing the piping port, regardless of wiring block. (Fill in the block model no. and layout selected using the block parts configuration on pages 51 to 61)
 - Write the total block quantity designated for the required quantity at the right end.
 - Circle required accessories.
 - Fills out length of mounting rail. (Fill in if custom length is required for the DIN rail)
 - Manifold specifications are provided for each series. Indicate corresponding specifications.
- MW4GA2 (body porting)Page 97
 MW4GB2 (base side porting).....Page 98
 MW4GZ2 (base rear porting).....Page 99

*Length (L7) of DIN rail

- (1) Calculate the rail length with the following calculation method. The obtained length is standard.
- (2) Length (L7) does not need to be filled in for standard length. Indicate the length when using a non-standard length.

● How to calculate DIN rail length

$$\text{Manifold length}(L_6) = (16 \times \text{Valve Block Quantity}) + (18 \times \text{Supply and exhaust Block Quantity}) + (13.5 \times \text{Partition Block Quantity}) + \text{Wiring block (including end block)} + (45 \times \text{I/O Block Quantity})$$

$$\text{DIN rail length}(L_7) = L_6 \times 12.5$$

$$L_7 : \rightarrow \frac{L_6 + 40}{12.5} \text{ round up at the decimal point}$$

$$\text{Rail mount pitch}(L_8) = L_7 - 12.5$$

Select from right table.

● DIN rail length quick reference

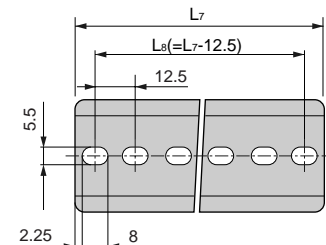
L ₆	135	147.5	160	172.5	185	197.5	210	222.5	235	247.5	260	272.5	285	297.5	310	322.5	335	347.5	360	372.5
Manifold length	135 or less	147.5 or less	160	172.5	185	197.5	210	222.5	235	247.5	260	272.5	285	297.5	310	322.5	335	347.5	360	372.5
L ₇ - Rail length	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400	412.5
Pitch L ₈	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400

372.5	385	397.5	410	422.5	435	447.5	460	472.5
to	to	to	to	to	to	to	to	to
385	397.5	410	422.5	435	447.5	460	472.5	485
425	437.5	450	462.5	475	487.5	500	512.5	525
412.5	425	437.5	450	462.5	475	487.5	500	512.5

Wiring block dimensions table

Model no.	Dimension (mm)
T10	175.5
T20	110
T30/5*	106
T8*	148.5

*End block counts as a wiring block



Note 1: If L₆ exceeds this chart, calculate the DIN rail length using the formula above.

How to fill out wiring specifications form

Not required for standard wiring or double wiring.

● Wiring specifications (example)

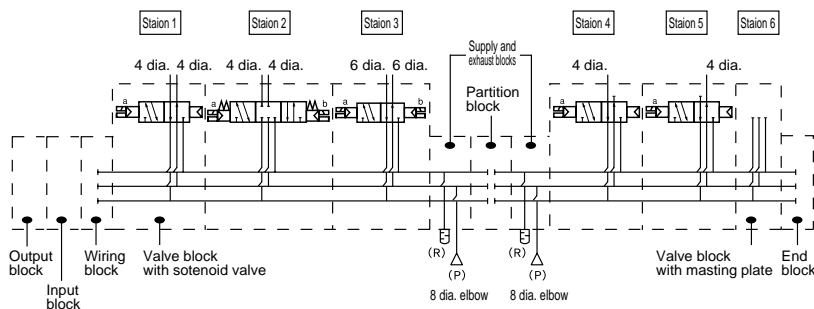
*The example below is based on the manifold specification sheet on page 95.

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

● Notes of wiring specifications

- (1) Fill the manifold specification sheet in when ordering models that are not standard wiring or double wiring. This order is processed as a customized order, and requires separate consultation.
- (2) The valve number is the number counting only valve blocks in order from the left facing the port.
This number differs from installation position numbers.
- (3) Valve block with masking plate is prewired.
"-MPS" is wiring only on side a. "-MPD" is wiring on sides a and b.
- (4) Double solenoid and 3-solenoid can not be assembled on "-MPS".
Expansion is required when the valve block with a solenoid valve is used.
Refer to page 92 to find out how to expand.
- (5) Reserved wiring for expansion can not be wired beforehand. Install the valve block with masking plate.

Reference circuit diagram This is the reference circuit diagram for the manifold model no. on the previous page.



- [] indicates each block configurations.
- Manifold station numbers are set in order from the left facing the piping port.
(*I/O blocks, wiring blocks, supply and exhaust blocks, partition blocks, end blocks does not count as a manifold station no.)
- Select model no. according to block configurations (P.51 to 65) and reduced wiring manifold (P.7 to 10, 25 to 28)
- The layout position is set in order from the left facing the piping port.
- The output block will be placed on the left with the ports facing you when both input block and output block are placed.

MW4GA2 block manifold specifications

● Contact ● Quantity sets ● Request date month day Issue / /

Slip No. Order No. Your company name

● Manifold model no. Contact Messrs.

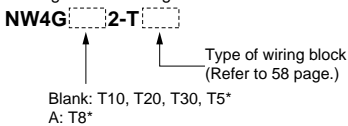
MW **GA2** **0-** **-** **-**

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Reduced wiring Ⓔ Terminal and connector Pin array Ⓕ Option Ⓖ Mount type Ⓗ Station number Ⓘ Voltage number

Refer to block configurations on P. 47 to 60 and model no. on P. 7 and 8 to fill in this sheet.

Part name (Page)	Model no.	Layout																														Quantity
		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	
I/O block (Page 59)	NW4GA2-IN- <input type="text"/> - <input type="text"/>																															
	NW4GA2-OUT- <input type="text"/> -B																															
Wiring block (Page 58)	NW4G <input type="text"/> -2-T <input type="text"/> (Note 1)																															
With solenoid valve valve block (Pages 7 to 10)	NW4GA2 <input type="text"/> -0- <input type="text"/>																															
	NW4GA2 <input type="text"/> -0- <input type="text"/>																															
	NW4GA2 <input type="text"/> -0- <input type="text"/>																															
	NW4GA2 <input type="text"/> -0- <input type="text"/>																															
	NW4GA2 <input type="text"/> -0- <input type="text"/>																															
	NW4GA2 <input type="text"/> -0- <input type="text"/>																															
	NW3GA2 <input type="text"/> -0- <input type="text"/>																															
With masking plate valve block (Page 53)	NW4GA2-MPS																															
	NW4GA2-MPD																															
Air supply spacer (Pages 59 to 60)	W4G2-P <input type="text"/> - <input type="text"/>																															
	W4G2-P <input type="text"/> - <input type="text"/>																															
Exhaust spacer (Pages 59 to 60)	W4G2-R- <input type="text"/>																															
	W4G2-R- <input type="text"/>																															
Supply and exhaust block (Page 55)	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																															
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																															
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																															
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																															
Partition block (Page 55)	NW4G2- <input type="text"/>																															
	NW4G2- <input type="text"/>																															
	NW4G2- <input type="text"/>																															
End block (Page 55)	NW4G2- <input type="text"/> R																															
DIN rail	L7 = <input type="text"/> (How to calculate length: page 95)	Blanking plug		Silencer		Tag plate		Cable clamp				Water proof plug		Attached Part																		
		GWP4-B	GWP6-B	SLW-H8	A	W4G-SCL-18A		W4G-SCL-18B		W4G-XSZ-12																						
		GWP8-B	GWP10-B	SLW-H10		Applicable cable outer diameter φ 14.5 to 16.5		Applicable cable outer diameter φ 16.5 to 18.5																								
		Cable with D-sub connector (refer to page 65)				Cable with multi-connector				Only multi-connector																						
N4T-CABLE-DO <input type="text"/> - <input type="text"/>				W4G-RMC- <input type="text"/>				W4G2-RM21WTP- <input type="text"/>																								

Note 1: Designate the wiring block model no. as shown below.



MW4GB2 block manifold specifications

● Contact ● Quantity sets ● Request date month day

Slip No.	Order No.
----------	-----------

Issue / /

Your company name

Contact

Purchase order No.

● Manifold model no.

MW4GB2 **0-** - - -

Ⓐ Model no. Ⓑ Solenoid position Ⓒ Port size Ⓓ Reduced wiring Ⓔ Terminal and connector Pin array Ⓕ Option Ⓖ Mount type Ⓗ Station number Ⓙ Voltage number

Refer to block configurations on P. 61 to 65 and model no. on P. 25 and 28 to fill in this sheet.

Part name (Page)	Model no.	Layout																														Quantity							
		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								
I/O block (Page 59)	NW4GB2-IN- <input type="text"/> - <input type="text"/>																																						
	NW4GB2-OUT- <input type="text"/> -B																																						
Wiring block (Page 58)	NW4G <input type="text"/> 2-T <input type="text"/> (Note 1)																																						
With solenoid valve valve block (Pages 25 to 28)	NW4GB2 <input type="text"/> 0- <input type="text"/>																																						
	NW4GB2 <input type="text"/> 0- <input type="text"/>																																						
	NW4GB2 <input type="text"/> 0- <input type="text"/>																																						
	NW4GB2 <input type="text"/> 0- <input type="text"/>																																						
	NW4GB2 <input type="text"/> 0- <input type="text"/>																																						
	NW4GB2 <input type="text"/> 0- <input type="text"/>																																						
	NW4GB2 <input type="text"/> 0- <input type="text"/>																																						
With masking plate valve block (Page 53)	NW4GB2-MPS- <input type="text"/>																																						
	NW4GB2-MPD- <input type="text"/>																																						
Air supply spacer (Pages 59 to 60)	W4G2-P <input type="text"/> - <input type="text"/>																																						
	W4G2-P <input type="text"/> - <input type="text"/>																																						
Exhaust spacer (Pages 59 to 60)	W4G2-R- <input type="text"/>																																						
	W4G2-R- <input type="text"/>																																						
Supply and exhaust block (Page 55)	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																						
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																						
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																						
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																						
Partition block (Page 55)	NW4G2- <input type="text"/>																																						
	NW4G2- <input type="text"/>																																						
	NW4G2- <input type="text"/>																																						
End block (Page 55)	NW4G2- <input type="text"/> R																																						
DIN rail	L ₇ = <input type="text"/> (How to calculate length Page 95)	Blanking plug		Silencer		Tag plate		Cable clamp		Water proof plug		Attached Part																											
		GWP4-B	GWP6-B	SLW-H8	W4G-SCL-18A	W4G-SCL-18B	W4G-XSZ-12																																
		GWP8-B	GWP10-B	SLW-H10	Applicable cable outer diameter φ 14.5 to 16.5			Applicable cable outer diameter φ 16.5 to 18.5																															
		Cable with D-sub connector (refer to page 65)				Multi cable with connector		Only multi-connector																															
N4T-CABLE-DO <input type="text"/> - <input type="text"/>				W4G-RMC- <input type="text"/>		W4G2-RM21WTP- <input type="text"/>																																	

Note 1: Designate the wiring block model no. as shown below.

NW4G2-T

↑ ↑
Type of wiring block
(Refer to 58 page.)
Blank: T10, T20, T30, T5*
B: T8*

Manifold specification sheet

MW4GZ2 block manifold specifications

Contact
 Quantity sets
 Request date month day

Slip No.	Order No.
----------	-----------

Issue / /

Your company name _____

Contact _____

Purchase order No. _____

Manifold model no.

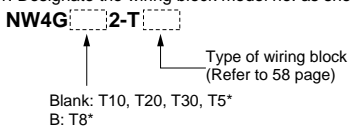
MW4GZ2 **0-** - - -

Model no.
 Solenoid position
 Port size
 Reduced wiring
 Terminal and connector pin Array
 Option
 Station number
 Voltage

Refer to block configurations on P. 61 to 65 and model no. on P. 25 and 28 to fill in this sheet.

Part name (Page)	Model no.	Layout																														Quantity					
		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						
I/O block (Page 59)	NW4GB2-IN- <input type="text"/> - <input type="text"/>																																				
	NW4GB2-OUT- <input type="text"/> -B																																				
Wiring block (Page 58)	NW4G <input type="text"/> 2-T <input type="text"/> (Note 1)																																				
With solenoid valve valve block (Pages 25 to 28)	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
	NW4GZ2 <input type="text"/> 0- <input type="text"/>																																				
With masking plate valve block (Page 53)	NW4GZ2-MPS- <input type="text"/>																																				
	NW4GZ2-MPD- <input type="text"/>																																				
Air supply spacer (Pages 59 to 60)	W4G2-P <input type="text"/> - <input type="text"/>																																				
	W4G2-P <input type="text"/> - <input type="text"/>																																				
Exhaust spacer (Pages 59 to 60)	W4G2-R- <input type="text"/>																																				
	W4G2-R- <input type="text"/>																																				
Supply and exhaust block (Page 55)	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																				
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																				
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																				
	NW4G2-Q <input type="text"/> - <input type="text"/> - <input type="text"/>																																				
Partition block (Page 55)	NW4G2- <input type="text"/>																																				
	NW4G2- <input type="text"/>																																				
	NW4G2- <input type="text"/>																																				
End block (Page 55)	NW4G2- <input type="text"/> R																																				

Note 1: Designate the wiring block model no. as shown below.



Common gland type (T10) wiring specifications

*Attach this to the manifold specification sheet when ordering specifications other than standard and double wiring.
*This sheet is not required for standard and double wiring.

Connector pin No.	Valve No.																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
T10																									
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
COM																									
COM																									

D sub-connector type (T30) wiring specifications

*Attach this to the manifold specification sheet when ordering specifications other than standard and double wiring.
*This sheet is not required for standard and double wiring.

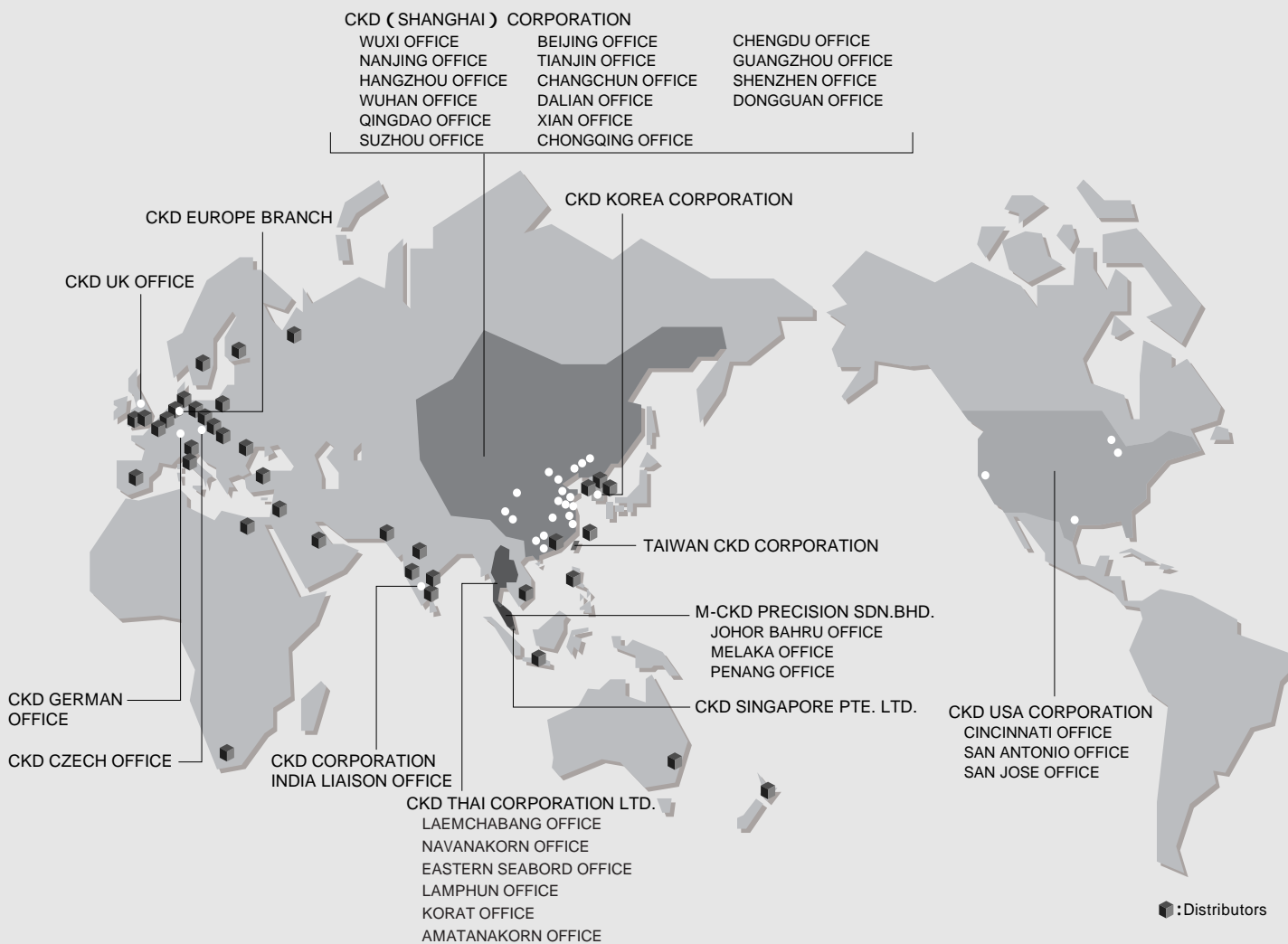
Connector pin No.	Valve No.																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
T30																									
1																									
14																									
2																									
15																									
3																									
16																									
4																									
17																									
5																									
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21																									
9																									
22																									
10																									
23																									
11																									
24																									
12																									
25																									
13(COM)																									

Flat cable connector type (T51/T53) wiring specifications

*Attach this to the manifold specification sheet when ordering specifications other than standard and double wiring.

*This sheet is not required for standard and double wiring.

Connector pin No.		Valve No.																								
T51	T53	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	1																									
2	2																									
3	3																									
4	4																									
5	5																									
6	6																									
7	7																									
8	8																									
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14	14																									
15	15																									
16	16																									
17	17																									
18	18																									
19	COM 19																									
20	COM 20																									
	21																									
	22																									
	23																									
	24																									
	25	COM																								
	26	COM																								



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