Safety precautions

Always read this section before starting use.
Please read the handling precautions and the safety precautions listed in "General Catalog of Pneumatic Valves" (catalog No. CB-023SA).

⚠WARNING

■Design and selection

●About the check valve

The check valve is designed to block the backpressure from neighboring air devices etc. It does not have the structure to be able to maintain a continuous seal, therefore do not use it for any purpose other than as a backpressure blocker.

⚠CAUTION

■Design and selection

●About the surge suppressor

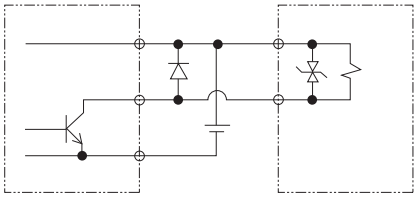
■The surge suppressor integrated with the solenoid valve is used to protect the output contact for that solenoid valve drive. There is no protection for the other peripheral devices, and devices could be damaged or malfunction by the surge. Surge generated by other devices could be absorbed and cause damage such as burning. Care must be taken for points below.

(1) The surge suppressor functions to limit a solenoid valve's surge voltage, which can reach several hundred volts, to a lower voltage level that the output contact can withstand. Depending on the type of output circuit being used, this may be inadequate and cause damage or malfunction. Check in advance whether the surge suppressor can be used with the surge voltage limit of the solenoid valve in use by confirming the output device's withstand pressure, circuit structure, and by the degree of return delay time.
If necessary, use other surge countermeasures. In addition, surge suppressors suppress the reverse voltage surges generated when the power is turned off to the levels below.

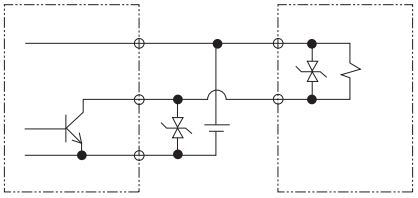
Specified voltage	Reverse voltage when the power is turned off
12VDC	About 27V
24VDC	About 47V

(2) When using an NPN type output unit, the voltage given in the above table plus a surge voltage equivalent to the power voltage could be applied on the output transistor. In this case increase the contact protection circuits.

<Output transistor protection circuit - Installation example 1>



<Output transistor protection circuit - Installation example 2>



(3) If other devices or solenoid valves are connected in parallel to the solenoid valve, reverse voltage surges generated when the solenoid valve is off are applied to these devices as well. Even when using the solenoid valve with a 24VDC surge suppressor, the surge's negative 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. Avoid parallel connection of devices with low resistance to reverse polarity voltages (e. g. , LED indicators).
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 amperage, 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 likewise burn. Even if the solenoid valve type is the same, the surge suppressor's limit voltage can differ, 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 overvoltage or overcurrent from a source other than the solenoid valve. Therefore, if a large current is flowing when output is on after the surge suppressor is damaged, the output circuit or solenoid valve could be damaged or ignite. Do not keep power on when damaged.
Provide an overcurrent protection circuit on the power and/or drive circuit, or use a power supply with overcurrent protection so that a large current does not flow continuously.

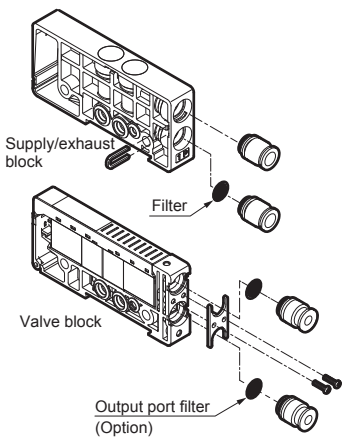
●About polarity

This solenoid valve has a polarity. Thus, select a model based on the specifications of the output unit you are currently using.

■Installation and adjustment

●About manifold installation

Incorrect installation using the DIN rail-mount method could cause the manifold to fall off or be damaged. If the manifold weighs more than 1 kg or more, is in an environment in which vibration or impact occurs, affix the DIN rail onto the seating plane at 50 to 100 mm intervals and confirm that there are no problems with the installation before use.



■During use and maintenance

■A port filter is used to prevent foreign materials from entering and causing problems in a manifold (mesh pore size: Ø0.3mm). This is not for improving the quality of compressed air, so read the warnings and the cautions on the introductory pages of "General Catalog of Pneumatic Valves (No. CB-023SA)" very well before installation and/or adjustment. Do not remove or force the port filter. The filter could deform and result in problems.
If contaminants or foreign materials are found on the filter surface, use a light air blowing, or tweezers, etc to remove them.