

Z VALVE SERIES OVERVIEW

Z Valve Family

Innovative

Cost effective

Versatile

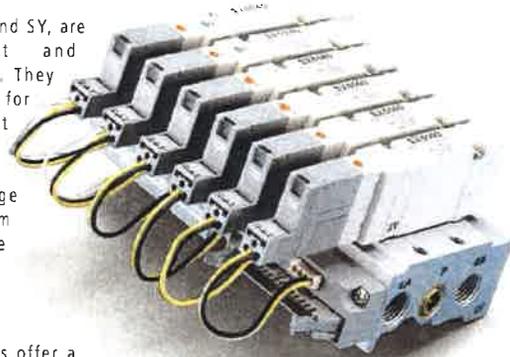
SMC Pneumatics has again confirmed its technological leadership in the world pneumatics market with the release of the Z valve series.

The result of a major research and development program is a family of three valve ranges whose generic name 'Z' is literally translated as infinity or ultimate.

The Z valve family comprises of three associated yet different product series, VQ, SX and SY, which provide cost effective solutions to pneumatic problems through the extensive range of valve and manifold configurations that are available.

The new Z valves give you major advances in solenoid pilot valve technology, spool design and manifold features that allow benefits in extended life cycle, high flow and low power consumption.

All three series, VQ, SX and SY, are compact, lightweight and aesthetic in appearance. They offer particular strengths for different requirements but have a commonality of major features and benefits across the range to give you maximum versatility, performance and reliability in your quest for competitive advantage.



Both the SX and SY series offer a wide range of conventional body ported and subbase mounted valves. These valves feature the latest guided spool with slimline water resistant seals which protect it against airline condensate carryover. This, together with the low power consumption, high speed solenoid pilot operator, allows a minimum life cycle in excess of fifty million.

In the case of the SX series, a further space saving is achieved by locating both solenoid operators at one end of the valve.

Aluminum bar manifolds, featuring either threaded ports or integrated push-in connectors, together with modular stacking manifolds, allow the valves to be mounted conveniently in the required layout. Also available is a pre-wired, plug-in modular manifold which can be ordered for use on a DIN rail system.

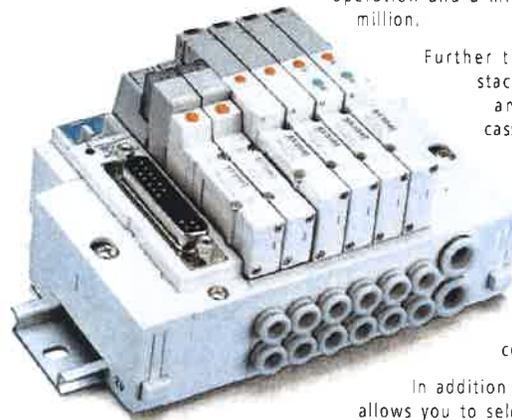
The VQ series incorporates matched lapped and ground stainless steel spool and sleeve design with the new solenoid pilot operator to provide you with high speed operation and a minimum expected life cycle in excess of two hundred million.

Further to the body ported, subbase mounted and modular stacking manifold types, the VQ series also offers two new and innovative multiple valve variants, the flip and cassette types.

The flip type integrates both the valve and base in a super compact arrangement which still allows ease of interchangeability. The cassette type allows modular slices to be clipped onto a DIN rail for another flexible and compact manifold assembly.

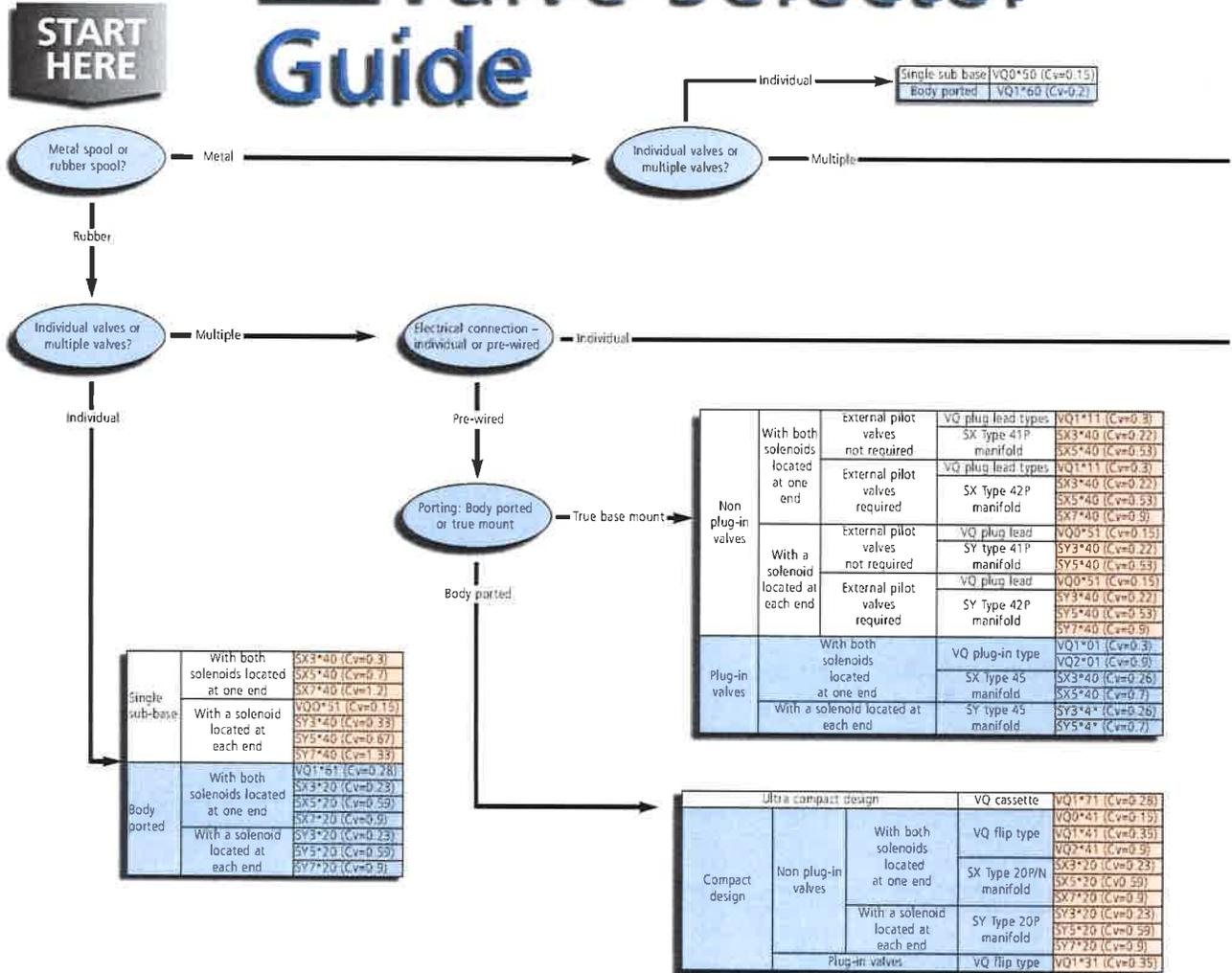
The provision of the solenoid electrics in either negative common or positive common will allow compatibility with any chosen control device.

In addition to the above features, the new SMC Z family of valves allows you to select from a comprehensive range of mounting brackets, electrical connectors, port adapters, manifold accessories and serial transmission devices to provide the complete solution for your application.



Should you require the assistance of SMC staff for any reason concerning the use and application of the Z family, please contact your local SMC Sales Office.

Z Valve Selector Guide



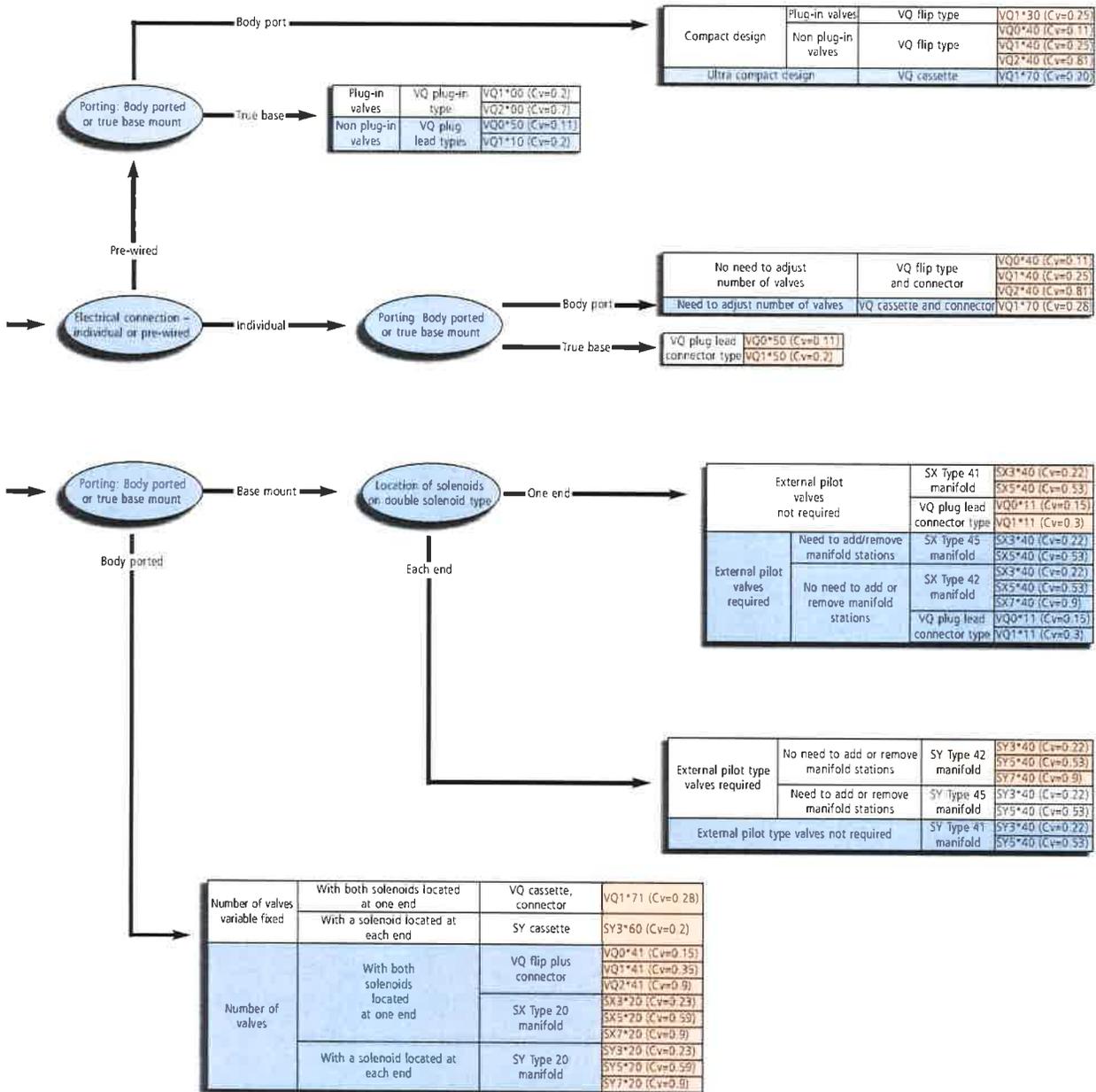
How To Use This Guide

START in the top left hand corner of the page and make your first decision – metal spool or rubber spool?

Follow your decision line until you come to another choice. i.e. individual or multiple valves.

Keep following your decision line until you arrive at a table. Starting at the left of the table, make your first of two possible choices. Follow your choice one column to the right, and make your next decision.

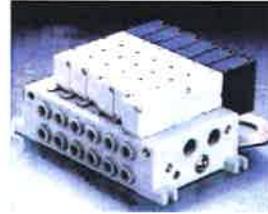
Remember, at each stage across the table you may only select one of the options immediately to the right of the current box. Do not deviate up or down. Eventually you will arrive at a selection in the right hand column (shaded pink). Now choose the valve with your required Cv.



- ✓ When a valve type has been selected, please consult the relevant catalog page in the following section, or your local SMC Sales Office for how to order information and details of stocked products.
- ✓ If you require further assistance or explanation with this guide, please contact your local SMC Sales Office.
- ✓ This guide does not cover "made to order" options and variants e.g. SY body ported external pilot types. Further information is available from catalogs E135-A (SY), E131-B (VQ), E139-A (SX) or your local SMC Sales Office.
- ✓ The VQ flip type valves offer only two position versions - three position bodies are not available.
- ✓ A true sub-base mount valve is defined as: "The valve body cannot be removed from the manifold without disturbing any pre-installed piping" in all pneumatic connections are made to the manifold, not the valve.

5 PORT METAL SEAL/RUBBER SEAL
BASE MOUNTED / PLUG IN TYPE
SERIES VQ4000

- ✓ High Speed and Long Life
- ✓ Compact Design with Large Flow Capacity
- ✓ Various Centralized Wiring Options
- ✓ Optional IP65 Available
- ✓ Dust Proof, Jet Proof



TECHNICAL
SPECIFICATIONS

SERIES VQ4000

Type Of Seal	Metal Seal	Rubber Seal	
	Air Inert Gas	Air Inert Gas	
Maximum Operating Pressure	1MPa (145PSI)		
Minimum Operating Pressure	Single	0.15MPa (22PSI)	0.20MPa (29PSI)
	Double	0.15MPa (22PSI)	0.15MPa (22PSI)
	3 Position	0.15MPa (22PSI)	0.20MPa (29PSI)
Proof Pressure	1.5MPa (220PSI)		
Ambient & Fluid Temperature	-10 ~ 50°C / 14~122°F	-5 ~ 50°C / 23~122°F	
Lubrication	Not Required		
Manual Override	Pushing Type/Slotted Locking Type (Tool Type) Option		
Shock/Vibration Resistance	150/30 m/s ²		
Enclosure	Dust Proof (Available to IP65 Type)		
Coil Rated Voltage	12, 24VDC and 100, 110, 200, 220VAC (50/60Hz)		
Allowable Voltage	±10% of Rated Voltage		
Coil Insulation	Class B		
Power Consumption (Current Value)	24VDC	1WDC (42mA), 0.5WDC (21mA)	
	12VDC	1WDC (83mA), 0.5WDC (42mA)	
	100VAC	Inrush 1.2VA (12mA), Holding 1.2VA (12mA)	
	110VAC	Inrush 1.3VA (11.7mA), Holding 1.3VA (11.7mA)	
	200VAC	Inrush 2.4VA (12mA), Holding 2.4VA (12mA)	
220VAC	Inrush 2.6VA (11.7mA), Holding 2.6VA (11.7mA)		

SYMBOLS

1	2 position single A B R1 P R2
2	2 position double A B R1 P R2
3	3 position closed center A B R1 P R2
4	3 position exhaust center A B R1 P R2
5	3 position pressure center A B R1 P R2

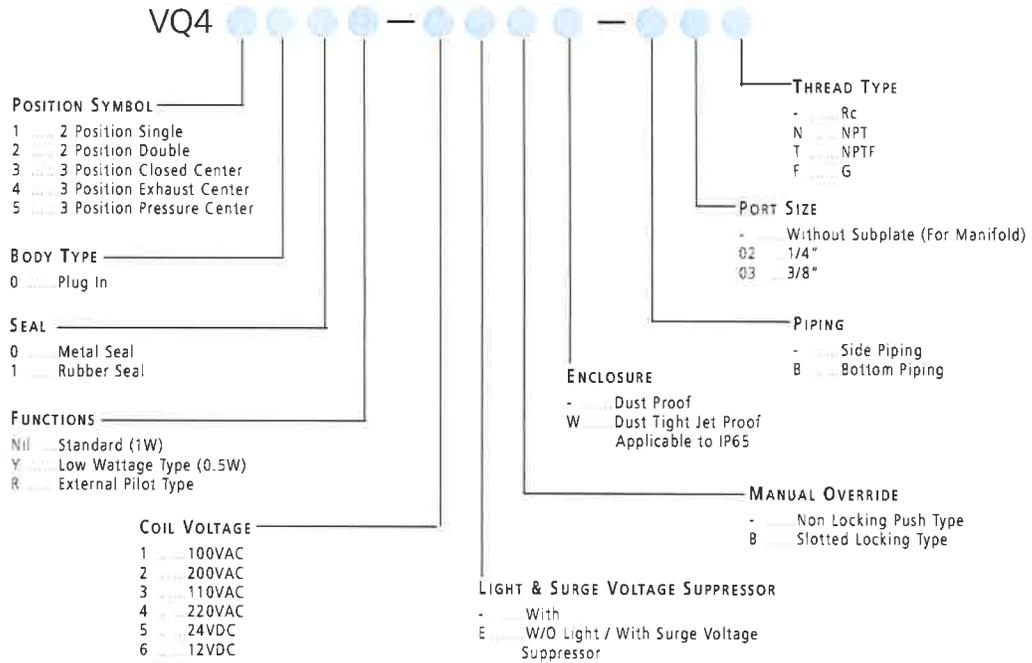
MODEL
SERIES VQ4000

Number Of Solenoids	Type	Type	Note 1) Effective Area mm ² (Cv)	Response Time ms Note 2)		
				Standard 1W	Low Wattage and AC	
2 Positions	Single	Metal Seal	VQ41(0, 5)0	36.0 (2.0)	20 or less	22 or less
		Rubber Seal	VQ41(0, 5)0	39.6 (2.2)	25 or less	27 or less
	Double	Metal Seal	VQ42(0, 5)0	36.0 (2.0)	12 or less	12 or less
		Rubber Seal	VQ42(0, 5)0	39.6 (2.2)	15 or less	15 or less
3 Positions	Closed	Metal Seal	VQ43(0, 5)0	32.4 (1.8)	45 or less	47 or less
		Rubber Seal	VQ43(0, 5)0	36.0 (2.0)	50 or less	52 or less
	Center	Metal Seal	VQ44(0, 5)0	36.0 (2.0)	45 or less	47 or less
		Rubber Seal	VQ44(0, 5)0	39.6 (2.2)	50 or less	52 or less
	Exhaust	Metal Seal	VQ45(0, 5)0	36.0 (2.0)	45 or less	47 or less
		Rubber Seal	VQ45(0, 5)0	39.6 (2.2)	50 or less	52 or less

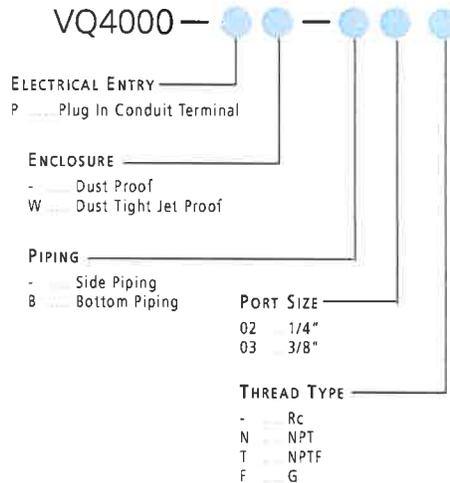
Note 1) VValue for Valve on Subplate and Cylinder Port Rc 3/8

Note 2) As per JISB8375-1981 (Supply Pressure; 0.5 MPa (5.1 kgf/cm²); with Indicator Light and Surge Voltage Suppressor; Clean Air)

How To ORDER
SERIES VQ4000



How To ORDER
SUBPLATE SERIES VQ4000



How To
ORDER

MANIFOLD SERIES VQ4000

VV5Q4 1

MANIFOLD TYPE

1 Plug In Unit

NO. OF STATIONS

02 2 Stations
n n Stations
Max & Min depends on Kit
Refer to Section

PORT SIZE

- C8 One Touch Fitting for ø8
- C10 One Touch Fitting for ø10
- C12 One Touch Fitting for ø12
- N7 One Touch Fitting for ø1/4"
- N9 One Touch Fitting for ø5/16"
- N11 One Touch Fitting for ø3/8"
- 02 1/4"
- 03 3/8"
- B Bottom Piping 1/4"
- CM Mixed Size

THREAD TYPE

- Rc
- NPT
- NPTF
- G

OPTION

- None
 - CD Exhaust Cleaner; For D Side Mounting (NOTE 2)
 - CU Exhaust Cleaner; For U Side Mounting (NOTE 2, 3)
 - K Special Wiring Spec (Other than Double Wiring) (NOTE 4)
 - N Name Plate (T Kit Only)
 - SD Direct Jet with Silencer Box; D Side Exhaust
 - SU Direct Jet Silencer Box; U Side Exhaust (NOTE 4)
 - W Enclosure IP65 (Except F Kit)
- NOTE 1) WHEN SPECIFYING MORE THAN ONE OPTION, COMBINE SYMBOLS IN ALPHABETICAL ORDER
NOTE 2) COMBINATION OF CU/CD AND SU/SD IS NOT POSSIBLE
NOTE 3) COMBINATION OF T AND S KITS IS NOT POSSIBLE
NOTE 4) SPECIFY THE WIRING SPECIFICATIONS BY MEANS OF THE MANIFOLD SPECIFICATION FORM (EXCEPT L KIT)

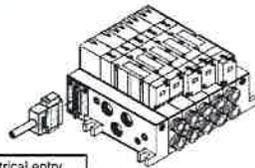
CONTROL UNIT

Refer to CAT:E150 for details

KIT / ELECTRICAL ENTRY / CABLE LENGTH

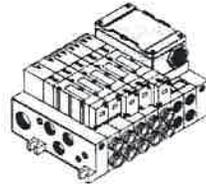
Kit/Electrical entry/Cable length

F Kit (D sub-connector)



Electrical entry				
D side	U side			
D0	U0	Without cable	Note 2)	2 to 12 stations
D1	U1	Cable length 1.5m		
D2	U2	Cable length 3m		
D3	U3	Cable length 5m		

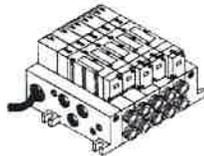
T Kit (Terminal box kit)



Applicable to IP65

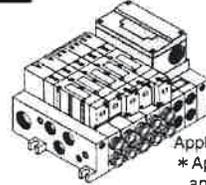
Kit T	0	Terminal box	3 to 12 stations	Note 2)
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L Kit (Lead wire kit)



Electrical entry				
D side	U side			
D0	U0	Cable length 0.6m	2 to 16 stations	Applicable to IP65
D1	U1	Cable length 1.5m		
D2	U2	Cable length 3m		

S Kit (Serial transmission kit)

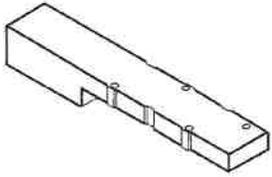
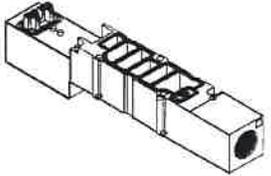
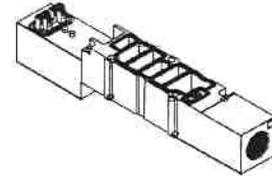
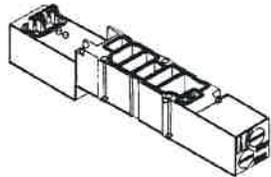
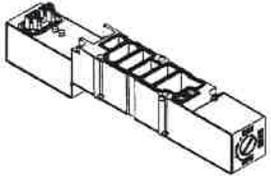
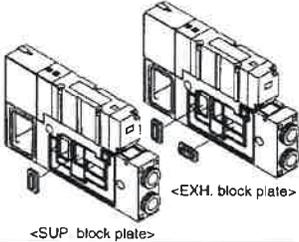
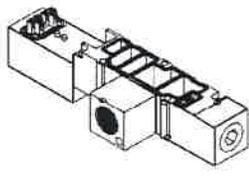
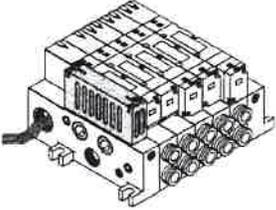
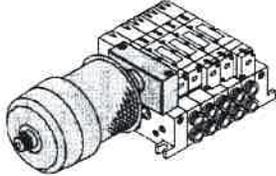


The valve is equipped with a lamp/surge voltage suppressor, and the voltage is 24VDC

Applicable to IP65
* Applicable to INPUT and OUTPUT type.

Kit S			
O		Without SI unit	
A		With general type SI unit	
B		With SI unit for Mitsubishi MELSECNET/NET S3 data link system	
C		With SI unit for OMRON SYSBUS wire system	
D		With SI unit for Sharp New satellite I/O link system	
F1		With SI unit for NKE Wiring saving system (16 points output)	
J1		With SI unit for Sankis S-LINK system (16 points output)	
J2		With SI unit for Sankis S-LINK system (8 points output)	
K		With SI unit for Fuji electric T-link mini system	
O		With SI unit for Device Net and OMRON Compo Bus	
R1		With SI unit for OMRON Compo Bus/S (16 points)	
R2		With SI unit for OMRON Compo Bus/S (8 points)	
		With SI unit for Mitsubishi MELSECNET/NET S3 data link system	
BN		Input unit: <input type="checkbox"/> Stations (0 to 2)	

OPTIONS
MANIFOLD SERIES VQ4000

<p>Blank plate ass'y VVQ4000-10A-1</p> 	<p>Individual SUP. spacer VVQ4000-P-1-03</p> 	<p>Individual EXH. spacer VVQ4000-R-1-03</p> 
<p>Speed controller spacer VVQ4000-20A-1</p> 	<p>SUP. stop valve spacer VVQ4000-37A-1</p> 	<p>SUP. EXH. block plate VVQ4000-16A</p>  <p><EXH. block plate> <SUP block plate></p>
<p>Release valve spacer VVQ4000-24A-1D (Note)</p> 	<p>Built-in silencer (Direct exhaust) [-S $\frac{D}{U}$] (Note)</p> 	<p>For exhaust cleaner mounting [-C $\frac{D}{U}$] (Note)</p>  <p>Applicable exhaust cleaner AMC 610-10</p>

(Note) Combination of external pilot specification and release valve spacer, built-in silencer box direct exhaust, exhaust cleaner mounting type is not available.