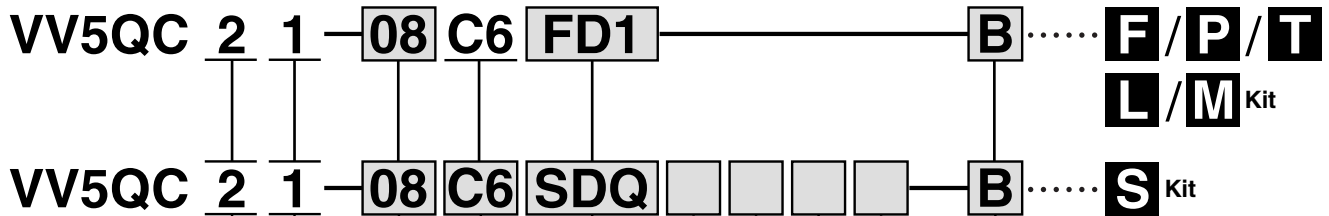


Series VQC2000

Base Mounted Plug-in Unit

How to Order Manifold



Series
2 VQC2000

Manifold model
1 Plug-in unit

Stations
01 1 station
: :
: :

The maximum number of stations differs depending on the electrical entry.

Cylinder port size

C4	With ø4 One-touch fitting
C6	With ø6 One-touch fitting
C8	With ø8 One-touch fitting
CM	Mixed sizes and with port plug
L4	Top ported elbow With ø4 One-touch fitting
L6	Top ported elbow With ø6 One-touch fitting
L8	Top ported elbow With ø8 One-touch fitting
B4	Bottom ported elbow With ø4 One-touch fitting
B6	Bottom ported elbow With ø6 One-touch fitting
B8	Bottom ported elbow With ø8 One-touch fitting
LM	Elbow port, mixed sizes



Note 1) Indicate the size in the specification sheet in the case of "CM" and "LM".

Note 2) Symbols for inch sizes are as follows:

<For One-touch fittings>

N3: ø5/32"

N7: ø1/4"

N9: ø5/16"

NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.

Kit designation/Electrical entry/Cable length
(Refer to page 2-2-16 for detailed information on kits.)

SI unit COM.

SI unit COM	EX250					EX500				EX126
	DeviceNet	PROFIBUS-DP	CC-LINK	AS-i	CANopen	DeviceNet	PROFIBUS-DP	CC-LINK	Remote I/O	CC-LINK
Nil +COM	—	—	○	—	—	○	○	○	○	○
N -COM	○	○	—	○	○	○	○	○	○	—



Note) Leave the box blank for the SI unit COM without SI unit (SD0).

Number of input blocks (Fill out for I/O unit only)

Nil	Without SI unit/input block (SD0)
0	Without input block
1	With 1 input block
:	:
8	With 8 input blocks

Option

Nil	None
B	All stations with back pressure check valve Note 1)
D	With DIN rail (Rail length: Standard)
D□	With DIN rail (Rail length: Special) Note 2)
K	Special wiring specifications Note 3)
N	With name plate
R	External pilot Note 4)
S	Direct exhaust with built-in silencer Note 5)
T	Branched P and R ports on U side Note 6)

* When specifying more than one option, enter symbols in alphabetical order.
Example: -BRS

Note 1) When using the back pressure check valve for the necessary stations only, enter the back pressure check valve part no. and indicate the number of manifold stations on the specification sheet.

Note 2) For special DIN rail length, indicate "D□". (Enter the number of stations inside □.)
Example: -D08

In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.

The specified number of stations must be larger than the number of stations on the manifold.

Indicate "-D0" for the option without DIN rail.

Note 3) Be sure to indicate the wiring specifications on the specification sheet.

Note 4) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.

Note 5) The built-in silencer type does not satisfy the IP67 standard.

Note 6) The SUP and EXH ports on U side are branched (toward the cylinder port and coil) with ø12 one-touch fittings for connection.

Input block COM. (Fill out for I/O unit only)

Nil	PNP (+) or without SI unit/input block
N	NPN (-)

Input block type (Fill out for I/O unit only)

Nil	Without input block
1	M12, 2 inputs
2	M12, 4 inputs
3	M8, 4 inputs (3 pins)

How to Order Valves

VQC 2 1 0 0 5

Series

2 VQC2000

Type of actuation

1	2 position single (A)(B) 4 2 5 1 3 (R1)(P)(R2)	A Note)	4 position dual 3 port valve (A) (A) (B) 4 4 2 5 1 3 (R1) (P) (R2) N.C (P) N.C
	2 position double (metal) (A)(B) 4 2 5 1 3 (R1)(P)(R2)		4 position dual 3 port valve (B) (A) (B) 4 4 2 5 1 3 (R1) (P) (R2) N.O (P) N.O
2	2 position double (rubber) (A)(B) 4 2 5 1 3 (R1)(P)(R2)	B Note)	4 position dual 3 port valve (C) (A) (B) 4 4 2 5 1 3 (R1) (P) (R2) N.C (P) N.O
	3 position closed center (A)(B) 4 2 5 1 3 (R1)(P)(R2)		
3	3 position exhaust center (A)(B) 4 2 5 1 3 (R1)(P)(R2)	C Note)	
	3 position pressure center (A)(B) 4 2 5 1 3 (R1)(P)(R2)		
4		Note) For rubber seal type only.	
5			

Light/Surge voltage suppressor

Nil	With
E	Without Note)

Note) Not applicable to S kit.

Coil voltage

5	24 VDC Note)
6	12 VDC

Note) S kit is only available for 24 VDC.

Function

Nil	Standard type (1 W)
K Note 1)	High pressure type (1.0 MPa)
N	Negative COM
R Note 2)	External pilot
Y	Low wattage type (0.5 W)

* When specifying more than one option, enter symbols in alphabetical order.

Note 1) For metal seal type only.

Note 2) Not applicable for dual 3 port valve.

Seal type

0	Metal seal
1	Rubber seal

Manual override

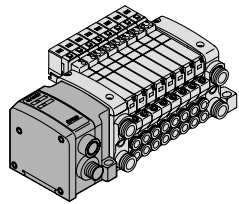
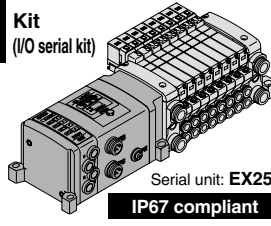
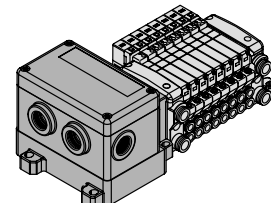
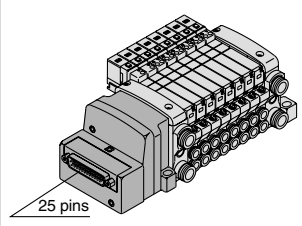
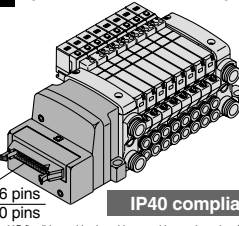
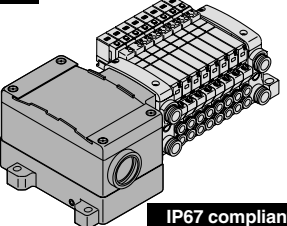
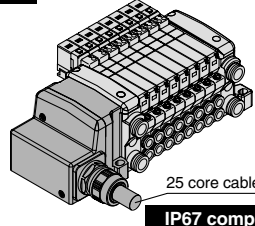
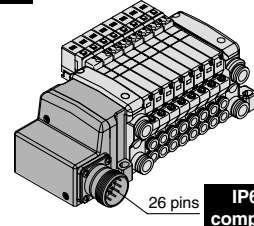
Nil: Non-locking push type (Slotted)

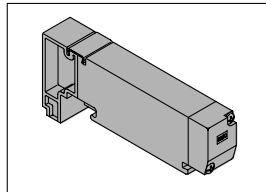
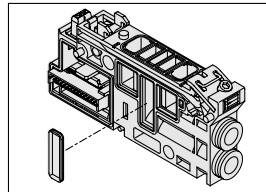
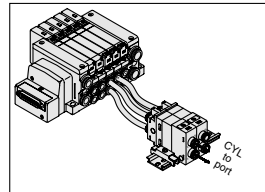
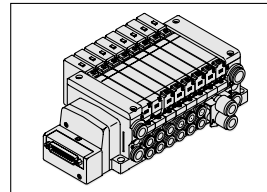
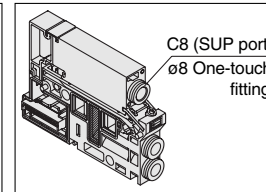
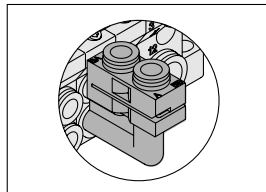
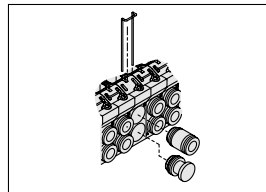
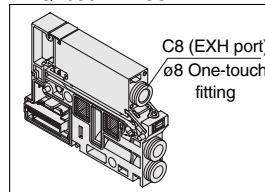
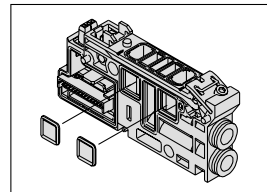
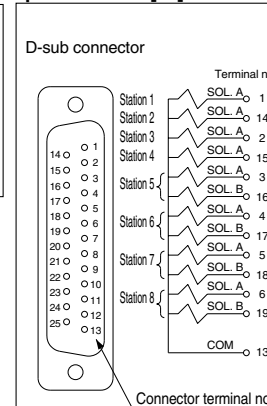
B: Locking type (Slotted)

C: Locking type (Manual)

D: Slide locking type (Manual)

Kit Designation/Electrical Entry/Cable Length

S Kit (Decentralized wiring type serial kit)  Serial unit: EX500 IP67 compliant Note) A separate gateway unit and communication cable are required. SD0 Serial kit without SI unit SDA1 Serial kit for Remote I/O SDA2 Serial kit for DeviceNet/PROFIBUS-DP/CC-LINK	S Kit (I/O serial kit)  Serial unit: EX250 IP67 compliant SD0 Serial kit without SI unit SDY Serial kit for CANopen SDQ Serial kit for DeviceNet SDN Serial kit for PROFIBUS-DP SDV Serial kit for CC-LINK SDTA AS-I, 8 in/out, 31 slave modes, 2 power supply systems SDBT AS-I, 4 in/out, 31 slave modes, 2 power supply systems SDTC AS-I, 8 in/out, 31 slave modes, 1 power supply systems SDTD AS-I, 4 in/out, 31 slave modes, 1 power supply systems	S Kit (Serial output kit)  Serial unit: EX126 IP67 compliant SDVB Serial kit for CC-LINK	F Kit (D-sub connector kit)  25 pins IP40 compliant FD0 D-sub connector kit (25P) without cable FD1 D-sub connector kit (25P) with 1.5 m cable FD2 D-sub connector kit (25P) with 3.0 m cable FD3 D-sub connector kit (25P) with 5.0 m cable
P Kit (Flat ribbon cable kit)  26 pins 20 pins IP40 compliant Note) For a 20P flat ribbon cable, the cable assembly must be ordered separately. PD0 Flat ribbon cable kit (26P) without cable PD1 Flat ribbon cable kit (26P) with 1.5 m cable PD2 Flat ribbon cable kit (26P) with 3.0 m cable PD3 Flat ribbon cable kit (26P) with 5.0 m cable PDC Flat ribbon cable kit (20P) without cable	T Kit (Terminal block box kit)  IP67 compliant TD0 Terminal block box kit	L Kit (Lead wire kit)  25 core cable IP67 compliant LD0 Lead wire kit (25 core) 0.6 m lead wire LD1 Lead wire kit (25 core) 1.5 m lead wire LD2 Lead wire kit (25 core) 3.0 m lead wire	M Kit (Multiple connector kit)  26 pins IP67 compliant MD0 Multiple connector kit (26P) without cable MD1 Multiple connector kit (26P) with 1.5 m cable MD2 Multiple connector kit (26P) with 3.0 m cable MD3 Multiple connector kit (26P) with 5.0 m cable

Manifold Option**Blanking plate assembly**
VVQ2000-10A-1**SUP block plate**
VVQ2000-16A**Perfect block**
VVQ2000-FPG-□□**Dual flow fitting assembly**
VVQ2000-52A-C10**Individual SUP spacer**
VVQ2000-P-1-C8**Elbow fitting assembly**
VVQ2000-F-L□**Port plug**
VVQ1000-58A**Individual EXH spacer**
VVQ2000-R-1-C8**EXH block plate**
VVQ2000-19A**Electrical wiring specifications [-K]****DIN rail mounting bracket [-D]**
VVQC2000-57A

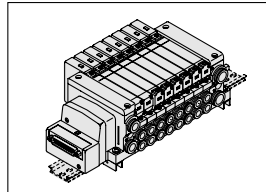
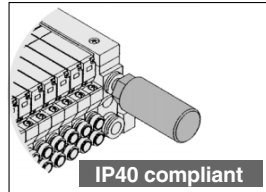
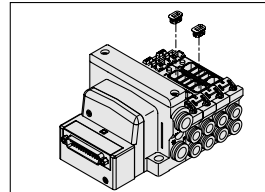
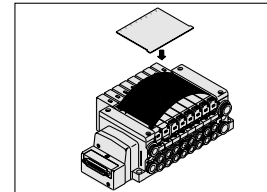
for (F, L, M, P, S (EX500) kit)

VVQC2000-57A-S

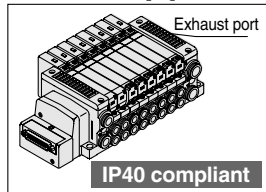
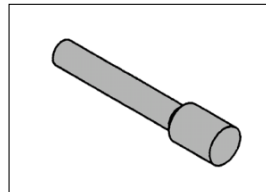
for (S (EX250) kit)

VVQC2000-57A-T

for (T, S (EX126) kit)

**Silencer (for EXH port)**
AN200-KM10**Back pressure check valve assembly [-B]**
VVQ2000-18A**Name plate [-N]**
VVQ2000-N-Stations
(1 to max. no. of stations)

Standard manifolds are for double wiring, but mixed wiring (single and double wiring) can be specified as options.

Direct EXH outlet with built-in silencer [-S]**Blanking plug**
KQ2P-□

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

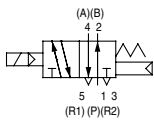
Series VQC

Base Mounted Plug-in Unit

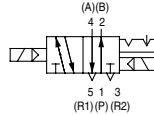


JIS Symbol

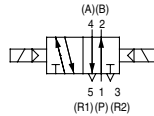
2 position single



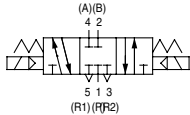
2 position double (metal)



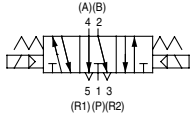
2 position double (rubber)



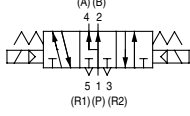
3 position closed center



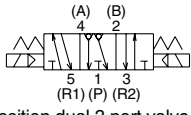
3 position exhaust center



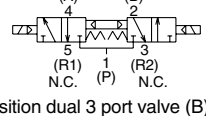
3 position pressure center



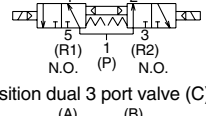
3 position exhaust center with pressure release valves



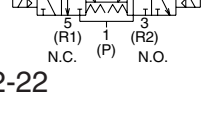
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



Model

Series	No. of solenoids		Model		Flow characteristics						Response time (ms)		Weight (g)	
					1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → R1, R2)			Standard: 1 W	Low wattage		
					C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv				
VQC1000	2 position	Single	Metal seal	VQC1100	0.70	0.15	0.16	0.72	0.25	0.18	12 or less	15 or less	64	
			Rubber seal	VQC1101	0.85	0.20	0.21	1.0	0.30	0.25	15 or less	20 or less		
		Double	Metal seal	VQC1200	0.70	0.15	0.16	0.72	0.25	0.18	10 or less	13 or less		78
			Rubber seal	VQC1201	0.85	0.20	0.21	1.0	0.30	0.25	15 or less	20 or less		
	3 position	Closed center	Metal seal	VQC1300	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less		
			Rubber seal	VQC1301	0.70	0.20	0.16	0.65	0.42	0.18	25 or less	33 or less		
		Exhaust center	Metal seal	VQC1400	0.68	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less		
			Rubber seal	VQC1401	0.70	0.20	0.16	1.0	0.30	0.25	25 or less	33 or less		
	Pressure center	Metal seal	VQC1500	0.70	0.15	0.16	0.72	0.25	0.18	20 or less	26 or less			
		Rubber seal	VQC1501	0.85	0.20	0.21	0.65	0.42	0.18	25 or less	33 or less			
4 position	Dual 3 port valve	Rubber seal	VQC1 ^A _C 01	0.70	0.20	0.16	0.70	0.20	0.16	25 or less	33 or less			
VQC2000	2 position	Single	Metal seal	VQC2100	2.0	0.15	0.46	2.6	0.15	0.60	22 or less	29 or less	90	
			Rubber seal	VQC2101	2.2	0.28	0.55	3.2	0.30	0.80	24 or less	31 or less		
		Double	Metal seal	VQC2200	2.0	0.15	0.46	2.6	0.15	0.60	15 or less	20 or less		110
			Rubber seal	VQC2201	2.2	0.28	0.55	3.2	0.30	0.80	20 or less	26 or less		
	3 position	Closed center	Metal seal	VQC2300	2.0	0.15	0.46	2.0	0.18	0.46	29 or less	38 or less		
			Rubber seal	VQC2301	2.0	0.28	0.49	2.2	0.31	0.60	34 or less	44 or less		
		Exhaust center	Metal seal	VQC2400	2.0	0.15	0.46	2.6	0.15	0.60	29 or less	38 or less		
			Rubber seal	VQC2401	2.0	0.28	0.49	3.2	0.30	0.80	34 or less	44 or less		
	Pressure center	Metal seal	VQC2500	2.4	0.17	0.57	2.0	0.18	0.46	29 or less	38 or less			
		Rubber seal	VQC2501	3.2	0.28	0.80	2.2	0.31	0.60	34 or less	44 or less			
4 position	Dual 3 port valve	Rubber seal	VQC2 ^A _C 01	1.8	0.28	0.46	1.8	0.28	0.46	34 or less	44 or less			
VQC4000	2 position	Single	Metal seal	VQC4100	6.2	0.19	1.5	6.9	0.17	1.7	20 or less	22 or less	230	
			Rubber seal	VQC4101	7.2	0.43	2.1	7.3	0.38	2.0	25 or less	27 or less		
		Double	Metal seal	VQC4200	6.2	0.19	1.5	6.9	0.17	1.7	12 or less	12 or less	260	
			Rubber seal	VQC4201	7.2	0.43	2.1	7.3	0.38	2.0	15 or less	15 or less		
	3 position	Closed center	Metal seal	VQC4300	5.9	0.23	1.5	6.3	0.18	1.6	45 or less	47 or less	280	
			Rubber seal	VQC4301	7.0	0.34	1.9	6.4	0.42	1.9	50 or less	52 or less		
		Exhaust center	Metal seal	VQC4400	6.2	0.18	1.5	6.9	0.17	1.7	45 or less	47 or less		
			Rubber seal	VQC4401	7.0	0.38	1.9	7.3	0.38	2.0	50 or less	52 or less		
		Pressure center	Metal seal	VQC4500	6.2	0.18	1.9	6.4	0.18	1.6	45 or less	47 or less		
			Rubber seal	VQC4501	7.0	0.38	1.9	7.1	0.38	2.0	50 or less	52 or less		
		Perfect	Metal seal	VQC4600	2.7	—	—	3.7	—	—	55 or less	57 or less	500	
			Rubber seal	VQC4601	2.8	—	—	3.9	—	—	62 or less	64 or less		



Note 1) Values represented in this column are in the following conditions:

VQC1000: Cylinder port size C6 without a back pressure check valve

VQC2000: Cylinder port size C8 without a back pressure check valve

VQC4000: Cylinder port size Rc 3/8

Note 2) Values represented in this column are based on JIS B 8375-1981 (operating with clean air and a supply pressure of 0.5 MPa. Equipped with light/surge voltage suppressor. Values vary depending on the pressure as well as the air quality.) Values for double types are when the switch is ON.

Standard Specifications

Valve specifications	Valve Configuration		Metal seal		Rubber seal		
	Fluid		Air/Inert gas				
	VQC1000/2000	Max. operating pressure		0.7 MPa (High pressure type: 1.0 MPa) ^{Note 4)}			
		Min. operating pressure	Single	0.1 MPa		0.15 MPa	
			Double	0.1 MPa			
			3 position	0.1 MPa		0.2 MPa	
			4 position	—		0.15 MPa	
	VQC4000	Max. operating pressure ^{Note 3)}		1.0 MPa (0.7 MPa)			
		Min. operating pressure	Single	0.15 MPa		0.2 MPa	
			Double	0.15 MPa			
			3 position	0.15 MPa		0.2 MPa	
	Proof pressure		1.5 MPa				
	Ambient and fluid temperature		−10 to 50°C ^{Note 1)}				
	Lubrication		Not required				
	Manual override		Push type/Locking type (tool required)/Locking type (Manual override) ^{Note 5)/Slide locking type ^{Note 5)}}				
Impact resistance/Vibration resistance		150/30 m/s ² ^{Note 2)}					
Enclosure		Dust proof (IP67 compliant)					
Electrical specifications	Rated coil voltage		24 VDC				
	Allowable voltage fluctuation		±10% of rated voltage				
	Coil insulation type		Equivalent to B type				
	Power consumption (Current)	24 VDC	1 W DC (42 mA), 0.5 W DC (21 mA)				
		12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA)				

Note 1) Use dry air to prevent condensation at low temperatures.

Note 2) **Impact resistance:** No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states.

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.

Note 3) Values in () are for the low wattage (0.5 W) specification.

Note 4) Metal seal type only.

Note 5) Only for VQC1000/2000.

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

Manifold Specifications

Series	Base model	Connection type	Piping specifications			Applicable stations Note 2)	Applicable solenoid valves	5 station weight (g)
			Port direction	Port size Note 1)				
				1, 3 (P, R)	2, 4 (A, B)			
VQC1000	VV5QC11-□□□	■ F Kit: D-sub connector ■ P Kit: Flat cable ■ T Kit: Terminal block box ■ S Kit: Serial transmission ■ L Kit: Lead wire ■ M Kit: Multiple connector	Side	C8 (For ø8) Options Direct outlet with built-in silencer	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 threads)	(F, L, M and P kits 1 to 12 stations) T kit 1 to 10 stations	VQC1□00-5 VQC1□01-5	628 (Single) 759 (Double, 3P)
VQC2000	VV5QC21-□□□		Side	C10 (For ø10) Options Direct outlet with built-in silencer Branch type C12 (for ø12)	C4 (For ø4) C6 (For ø6) C8 (For ø8)	S kit 1 to 8 stations: EX500 1 to 12 stations: EX250 1 to 8 stations: EX126	VQC2□00-5 VQC2□01-5	1051 (Single) 1144 (Double, 3P)
VQC4000	VV5QC41-□□□		Side	P: Rc 1/2 R: Rc 3/4	C8 (For ø8) C10 (For ø10) C12 (For ø12) Rc 1/4 Rc 3/8	(F, L, M and P kits 1 to 12 stations) T kit 1 to 10 stations S kit 1 to 12 stations: EX240, EX250 1 to 8 stations: EX500 1 to 8 stations: EX126	VQC4□00-5 VQC4□01-5	4150 • S kit (without unit) • Solenoid weight is not included.
		Bottom	Rc 1/4					

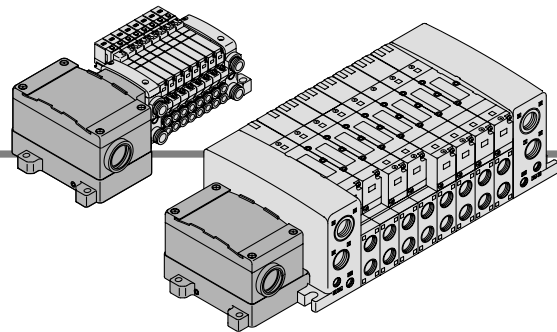
Note 1) One-touch fittings in inch sizes are also available.

Note 2) An optional specification for special wiring is available to increase the maximum number of stations.

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VQC1000/2000/4000

Kit (Terminal block box kit) IP67 compliant

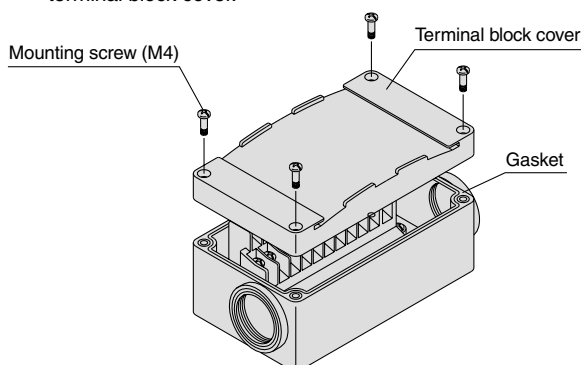


- This kit has a small terminal block inside a junction box. The provision of a G 3/4 electrical entry allows connection of conduit fittings.

Terminal Block Connection

Step 1. How to remove terminal block cover

Loosen the 4 mounting screws (M4) and remove the terminal block cover.



Step 3. How to replace the terminal block cover

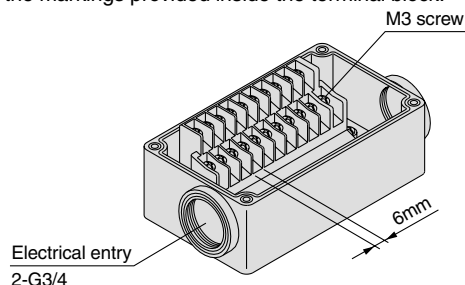
Securely tighten the screws to the torque shown in the table below, after confirming that the gasket is installed correctly.

Proper tightening torque (N·m)
0.7 to 1.2

Step 2. The diagram below shows the terminal block wiring.

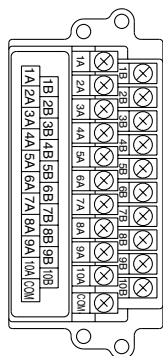
All stations are provided with double wiring regardless of the valves which are mounted.

Connect each wire to the power supply side, according to the markings provided inside the terminal block.



- Applicable crimp terminal (fork tongue type): 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5

Electrical Wiring Specifications (Conforms to IP67)



The internal wiring is double (connected to SOL. A and SOL. B) for all stations regardless of the type of valve or options. Mixed single and double wiring are available as options.



Note) When using the negative COM. specification for VQC1000/2000, use valves for negative COM.

Standard wiring

	Terminal no.	Polarity
Station 1	SOL. A 1A	(-) (+)
	SOL. B 1B	(-) (+)
Station 2	SOL. A 2A	(-) (+)
	SOL. B 2B	(-) (+)
Station 3	SOL. A 3A	(-) (+)
	SOL. B 3B	(-) (+)
Station 4	SOL. A 4A	(-) (+)
	SOL. B 4B	(-) (+)
Station 5	SOL. A 5A	(-) (+)
	SOL. B 5B	(-) (+)
Station 6	SOL. A 6A	(-) (+)
	SOL. B 6B	(-) (+)
Station 7	SOL. A 7A	(-) (+)
	SOL. B 7B	(-) (+)
Station 8	SOL. A 8A	(-) (+)
	SOL. B 8B	(-) (+)
Station 9	SOL. A 9A	(-) (+)
	SOL. B 9B	(-) (+)
Station 10	SOL. A 10A	(-) (+)
	SOL. B 10B	(-) (+)
	COM.	(+) (-)
		Positive COM. Negative COM.

Special Wiring Specifications (Option)

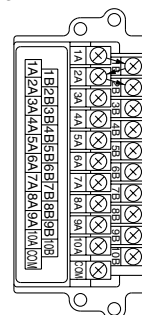
Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 20.

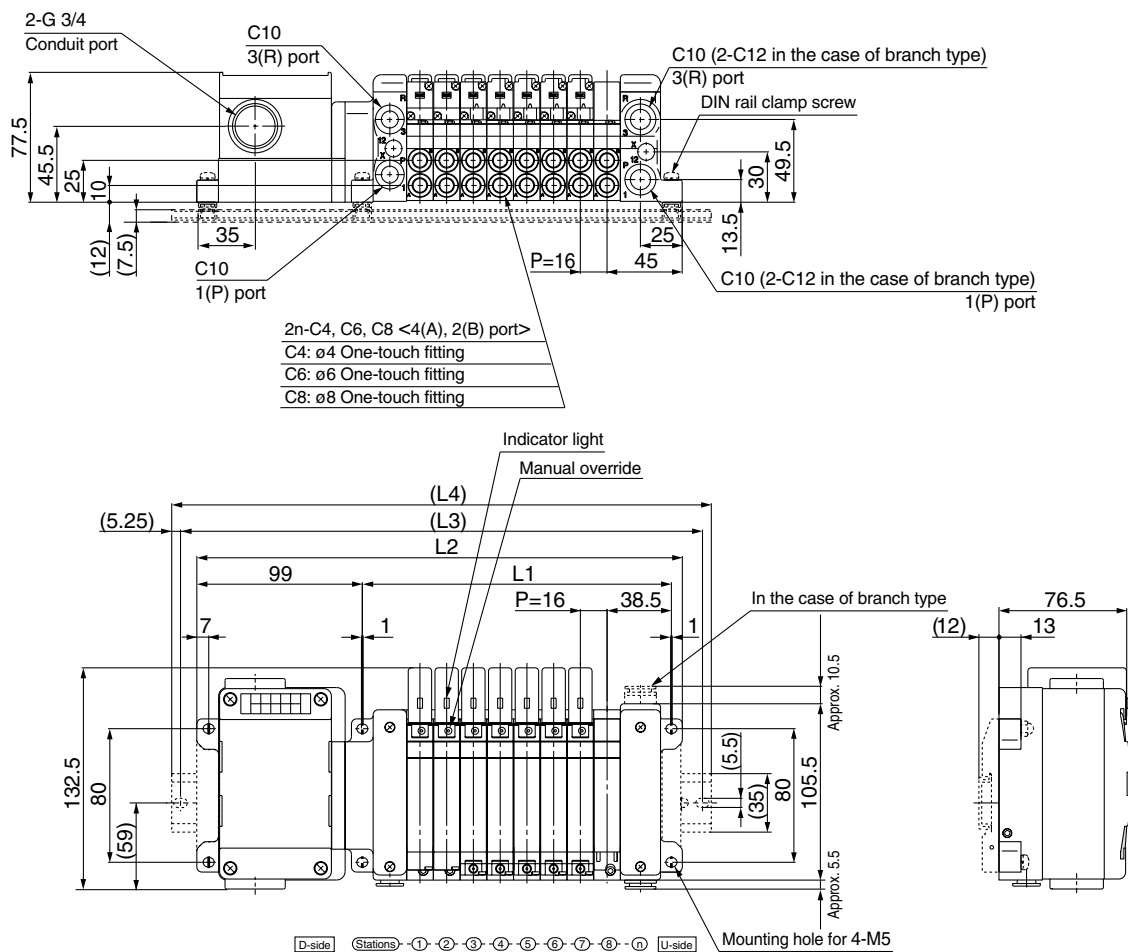
1. How to order

Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



T**VQC1000/2000/4000****Kit (Terminal block box kit) IP67 compliant****VV5QC21**

Formulas

L1 = 16n + 57 (Maximum 20 single wiring stations)

L2 = 16n + 163

n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377
L2	179	195	211	227	243	259	275	291	307	323	339	355	371	387	403	419	435	451	467	483
L3	200	212.5	237.5	237.5	262.5	262.5	287.5	312.5	325	371	362.5	375	408.5	412.5	425	437.5	462.5	496	487.5	500
L4	210.5	223	248	248	273	273	298	323	335.5	360.5	373	385.5	398	423	435.5	448	473	485.5	498	510.5

* With signal cut block, L4 is obtained by adding approximately 30 mm to L2.