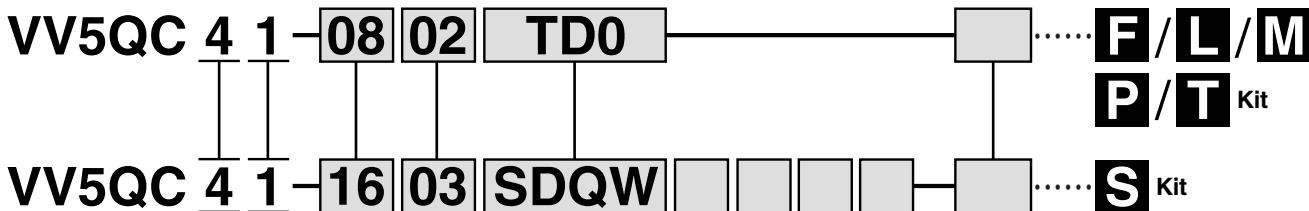


Series VQC4000

Base Mounted Plug-in Unit

How to Order Manifold



Series
4 VQC4000

Manifold model
1 Plug-in unit

Stations
01 1 station
⋮ ⋮

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

Cylinder port size

C8	With ø8 One-touch fitting
C10	With ø10 One-touch fitting
C12	With ø12 One-touch fitting
02	Rc 1/4
03	Rc 3/8
B	Bottom ported Rc 1/4
CM	Mixed

Note 1) Indicate the size in the specification order sheet in the case of "CM".
Note 2) Symbols for inch sizes are as follows:
N7: ø1/4"
N9: ø5/16"
N11: ø3/8"
NM: Mixed

Option

Nil	None
K	Special wiring specifications (except for double wiring) ^{Note 1)}
N	With name plate (available for T kit only) ^{Note 2)}

* When specifying more than one option, enter symbols in alphabetical order. Example: -KN
Note 1) Be sure to indicate the wiring specifications on the specification order sheet.
Note 2) The mounting position of the name plate is on the top face of the cover for the terminal block box.

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

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

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

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

Note) Max. 4 for EX240 and max 8 for EX250.

SI unit COM.

SI unit COM	EX240			EX250				EX500				EX126
	DeviceNet	PROFIBUS-DP	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).

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

Nil	Without input block
0	M12, 8 inputs (EX240)
1	M12, 2 inputs (EX250)
2	M12, 4 inputs (EX250)
3	M8, 4 inputs (EX250)

Kit Designation/Electrical Entry/Cable Length

S Kit (Decentralized wiring type serial kit)		S Kit (I/O serial kit)		S Kit (I/O serial transmission kit)		S Kit (Serial output kit)	
Serial unit: EX500 IP67 compliant		Serial unit: EX250 IP67 compliant		Serial unit: EX240 IP65 compliant		Serial unit: EX126 IP67 compliant	
SD0	Serial kit without SI unit	SD0	Serial kit without SI unit	SD0W	Serial kit without SI unit	SDVB	Serial kit for CC-LINK
SDA1	Serial kit for Remote I/O	SDY	Serial kit for CANopen	SDQW	Serial kit for DeviceNet		
SDA2	Serial kit for DeviceNet/PROFIBUS-DP/CC-LINK	SDQ	Serial kit for DeviceNet	SDNW	Serial kit for PROFIBUS-DP		
	1 to 8 stations (16 stations)	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				
		SDTB	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				
			1 to 4 stations (8 stations)				
			1 to 2 stations (4 stations)				
			1 to 4 stations (8 stations)				
			1 to 2 stations (4 stations)				

- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

How to Order Valves

VQC 4 1 0 0 [] - 5 [] []

Series

4	VQC4000
---	---------

Type of actuation

1	2 position single (A)(B) 4 2 5 1 3 (R1)(P)(R2)	4	3 position exhaust center (A)(B) 4 2 5 1 3 (R1)(P)(R2)
	2 position double (metal) (A)(B) 4 2 5 1 3 (R1)(P)(R2)		3 position pressure center (A)(B) 4 2 5 1 3 (R1)(P)(R2)
2	2 position double (rubber) (A)(B) 4 2 5 1 3 (R1)(P)(R2)	6	3 position perfect (A)(B) 4 2 5 1 3 (R1)(P)(R2)
	3 position closed center (A)(B) 4 2 5 1 3 (R1)(P)(R2)		

Light/Surge voltage suppressor

Nil	With
E	Without light, with surge voltage suppressor

Coil voltage

5	24 VDC <small>Note</small>
6	12 VDC

Note) S kit is only available for 24 VDC.

Function

Nil	Standard type (1 W)
R	External pilot
Y	Low wattage type (0.5 W)

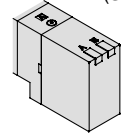
* When specifying more than one option, enter symbols in alphabetical order.

Seal type

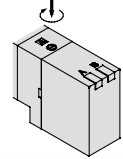
0	Metal seal
1	Rubber seal

Manual override

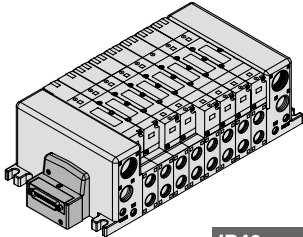
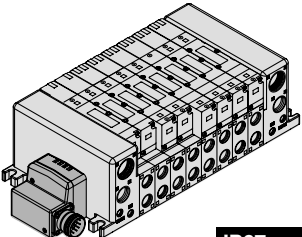
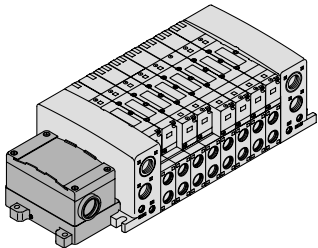
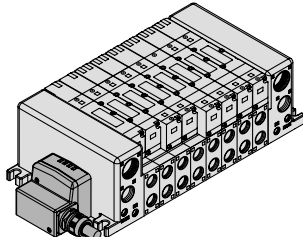
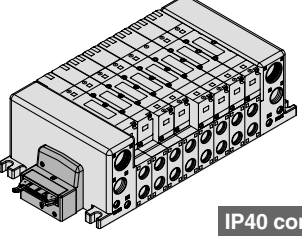
Nil: Non-locking push type (Slotted)



B: Locking type (Slotted)

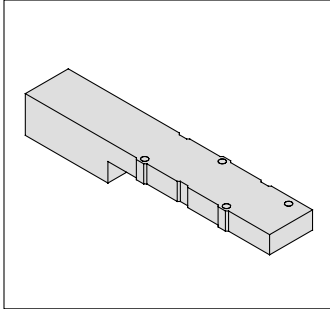


Kit Designation/Electrical Entry/Cable Length

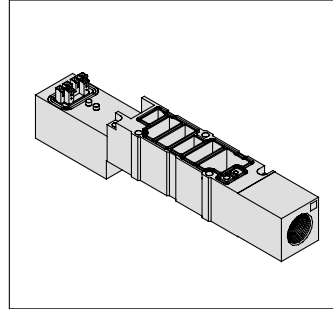
<p>F Kit (D-sub connector kit)</p>  <p>IP40 compliant</p>	<p>M Kit (Multiple connector kit)</p>  <p>IP67 compliant</p>	<p>T Kit (Terminal block box kit)</p>  <p>IP67 compliant</p>																				
			<table border="1"> <tr> <td>FD0</td> <td>D-sub connector kit (25P) without cable</td> <td rowspan="4">1 to 12 stations (16 stations)</td> </tr> <tr> <td>FD1</td> <td>D-sub connector kit (25P) with 1.5 m cable</td> </tr> <tr> <td>FD2</td> <td>D-sub connector kit (25P) with 3.0 m cable</td> </tr> <tr> <td>FD3</td> <td>D-sub connector kit (25P) with 5.0 m cable</td> </tr> </table>	FD0	D-sub connector kit (25P) without cable	1 to 12 stations (16 stations)	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	<table border="1"> <tr> <td>MD0</td> <td>Multiple connector kit (26P) without cable</td> <td rowspan="4">1 to 12 stations (16 stations)</td> </tr> <tr> <td>MD1</td> <td>Multiple connector kit (26P) with 1.5 m cable</td> </tr> <tr> <td>MD2</td> <td>Multiple connector kit (26P) with 3.0 m cable</td> </tr> <tr> <td>MD3</td> <td>Multiple connector kit (26P) with 5.0 m cable</td> </tr> </table>	MD0	Multiple connector kit (26P) without cable	1 to 12 stations (16 stations)	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
			FD0	D-sub connector kit (25P) without cable	1 to 12 stations (16 stations)																	
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FD2	D-sub connector kit (25P) with 3.0 m cable																					
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MD0	Multiple connector kit (26P) without cable	1 to 12 stations (16 stations)																				
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																					
<p>L Kit (Lead wire kit)</p>  <p>IP67 compliant</p>	<p>P Kit (Flat ribbon cable kit)</p>  <p>IP40 compliant</p> <p><small>Note</small>) For a 20P flat ribbon cable, the cable assembly must be ordered separately.</p>	<table border="1"> <tr> <td>TD0</td> <td>Terminal block box kit 1 to 10 stations (16 stations)</td> </tr> </table> <p><small>Note</small>) P kit: when using the flat ribbon cable kit (20P), order cable assemblies separately.</p>	TD0	Terminal block box kit 1 to 10 stations (16 stations)																		
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<table border="1"> <tr> <td>LD0</td> <td>Lead wire kit 0.6 m lead wire</td> <td rowspan="3">1 to 12 stations (16 stations)</td> </tr> <tr> <td>LD1</td> <td>Lead wire kit 1.5 m lead wire</td> </tr> <tr> <td>LD2</td> <td>Lead wire kit 3.0 m lead wire</td> </tr> </table>	LD0	Lead wire kit 0.6 m lead wire	1 to 12 stations (16 stations)	LD1	Lead wire kit 1.5 m lead wire	LD2	Lead wire kit 3.0 m lead wire	<table border="1"> <tr> <td>PD0</td> <td>Flat ribbon cable kit (26P) without cable</td> <td rowspan="4">1 to 12 stations (16 stations)</td> </tr> <tr> <td>PD1</td> <td>Flat ribbon cable kit (26P) with 1.5 m cable</td> </tr> <tr> <td>PD2</td> <td>Flat ribbon cable kit (26P) with 3.0 m cable</td> </tr> <tr> <td>PD3</td> <td>Flat ribbon cable kit (26P) with 5.0 m cable</td> </tr> <tr> <td>PDC</td> <td>Flat ribbon cable kit (20P) without cable <small>Note</small>)</td> <td>1 to 9 stations (16 stations)</td> </tr> </table>	PD0	Flat ribbon cable kit (26P) without cable	1 to 12 stations (16 stations)	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 <small>Note</small>)	1 to 9 stations (16 stations)		
LD0	Lead wire kit 0.6 m lead wire	1 to 12 stations (16 stations)																				
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PD3	Flat ribbon cable kit (26P) with 5.0 m cable																					
PDC	Flat ribbon cable kit (20P) without cable <small>Note</small>)	1 to 9 stations (16 stations)																				

Manifold Option

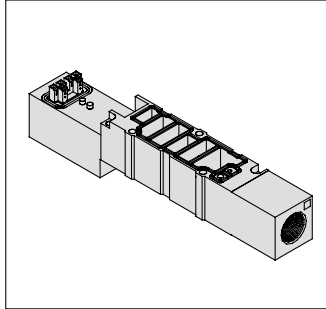
Blanking plate assembly
VVQ4000-10A-1



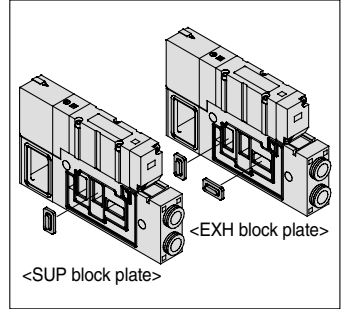
Individual SUP spacer
VVQ4000-P-1-02
03



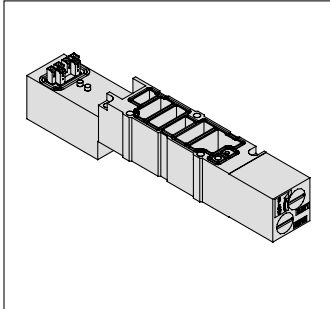
Individual EXH spacer
VVQ4000-R-1-02
03



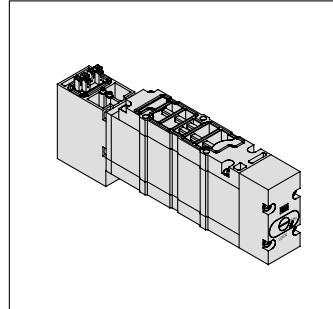
SUP/EXH block plate
VVQ4000-16A



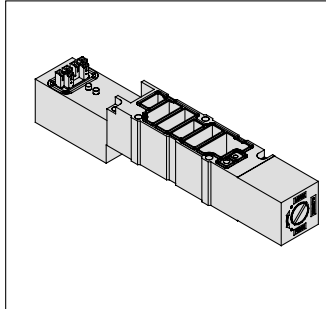
Throttle valve spacer
VVQ4000-20A-1



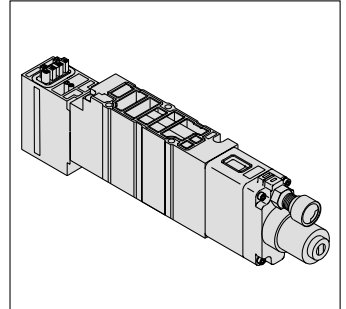
Residual pressure release valve
perfect spacer
VVQ4000-25A-1 (Note 1)



SUP stop valve spacer
VVQ4000-37A-1



Interface regulator
ARBQ4000-00-0-1



VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD



Note 1) Perfect spacers with residual pressure release valve cannot be combined with external pilot specifications.

Series VQC

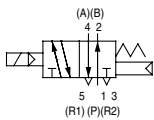
Base Mounted

Plug-in Unit

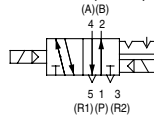


JIS Symbol

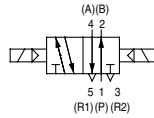
2 position single



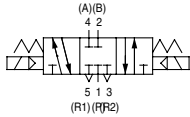
2 position double (metal)



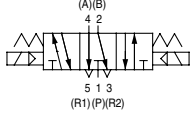
2 position double (rubber)



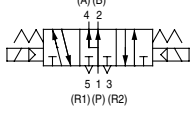
3 position closed center



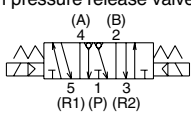
3 position exhaust center



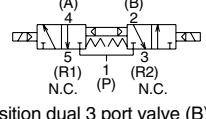
3 position pressure center



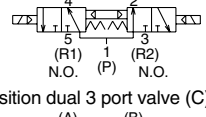
3 position exhaust center with pressure release valves



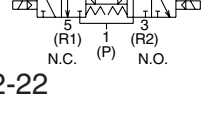
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



2-2-22

Model

Series	No. of solenoids	Model	Flow characteristics						Response time (ms) ^{Note 2)}		Weight (g)	
			1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → R1, R2)			Standard: 1 W	Low wattage		
			C [dm ³ /(s·bar)]	b	C _v	C [dm ³ /(s·bar)]	b	C _v				
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	
			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	78
			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	
			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	110
			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	
			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			
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 Configuration		Metal seal	Rubber seal		
Fluid		Air/Inert gas			
Valve specifications	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)		

- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

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.

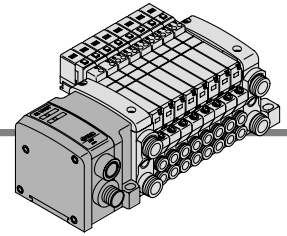
Manifold Specifications

Series	Base model	Connection type	Piping specifications		Applicable stations ^{Note 2)}	Applicable solenoid valves	5 station weight (g)
			Port direction	Port size ^{Note 1)}			
VQC1000	VV5QC11-□□□	<ul style="list-style-type: none"> ■ 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 S kit 1 to 8 stations: EX500 1 to 12 stations: EX250 1 to 8 stations: EX126	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)		VQC2□00-5 VQC2□01-5	1051 (Single) 1144 (Double, 3P)
VQC4000	VV5QC41-□□□		Side Bottom	C8 (For ø8) C10 (For ø10) C12 (For ø12) Rc 1/4 Rc 3/8 Rc 1/4	(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.

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.

Series VQC

S VQC1000/2000/4000 Kit (Serial transmission kit) Decentralized Serial Wiring



Gateway type serial transmission system

• Since wiring is "prepackaged" into one multi-connector type cable, wiring work is not only made easier, but much more accurate.

S kit can be used by connecting to gateway unit.

Gateway (GW) Unit IP65 compliant



How to Order

EX500 — G DN1

Communication protocol

DN1	DeviceNet	AB1-X1	Remote I/O (RIO)
PR1A	PROFIBUS-DP	MJ1	CC-LINK

Specifications

Model	EX500-GAB1-X1	EX500-GDN1	EX500-GPR1A	EX500-GMJ1
Applicable PLC/Communication protocol	Rockwell Automation PLC	DeviceNet Release 2.0	PROFIBUS-DP (EN50170)	CC-LINK Ver. 1.10
Communication speed	57.6/115.2/230.4 kbit/sec	125/250/500 kbit/sec	9.6/19.2/45.45/93.75/187.5/500 kbit/sec 1.5/3/6/12 Mbit/sec	156/625 kbit/sec 2.5/5/10 Mbit/sec
Rated voltage	24 VDC			
Power supply voltage range	Input and control unit power supply: 24 VDC ± 10% Solenoid valve power supply: 24 VDC + 10%/–5% (with power drop warning at approx. 20 V)			
	—	Communication power supply for DeviceNet 11 to 25 VDC	—	—
Current consumption	200 mA or less (Single GW unit)			
	—	Communication power supply for DeviceNet 50 mA or less	—	—
Number of inputs/outputs	Maximum 64 inputs/64 outputs			
Number of input/output branches	4 branches (16 inputs/16 outputs per branch)			
Branch cable	8 core heavy duty cable			
Branch cable length	5 m or less (total extension 10 m or less)			
Communication connector	M12 connector (8 pins, socket)			
Power connector	M12 connector (5 pins, plug)			
Ambient operating temperature/humidity	+5 to +45°C at 35% to 85% RH (No condensation)			
Enclosure	IP65			
Applicable standard	UL, CSA, CE			
Weight (g)	470			

Input Block IP67 compliant

How to Order Input Manifold

EEX500 — IB1 — E 8

Input unit specifications

Connector type	
E	M8 connector
T	M12 connector
M	M8 and M12 mixed

Stations	
1	1 station
...	...
8	8 stations

Applicable GW unit

Nil	DeviceNet
	PROFIBUS-DP
-X1	Remote I/O (RIO)



Note) When ordering an input block manifold, enter the [Input manifold part no.] + [Input block part no.] together. The input block, end block and DIN rail are included in the input manifold.

How to Order Input Block

EX500 — IE 1

Block type

1	M8 connector, PNP specifications
2	M8 connector, NPN specifications
3	M12 connector, PNP specifications
4	M12 connector, NPN specifications
5	8-point integrated type, M8 connector, PNP specifications
6	8-point integrated type, M8 connector, NPN specifications

Applicable GW unit

Nil	DeviceNet
	PROFIBUS-DP
-X1	Remote I/O (RIO)

* With waterproof cap

Input Unit Specifications

Connection block	Current source type input block (PNP input block) or Current sink type input block (NPN input block)
Communication connector	M12 connector (8 pins, plug)
Number of connection blocks	Maximum 8 blocks
Block supply voltage	24 VDC
Block supply current	0.65 A maximum
Current consumption	100 mA or less (at rated voltage)
Short circuit protection	Operates at 1A Typ. (power supply cut) GW unit reset by turning power OFF and back ON.
Enclosure	IP65
Weight (g) <small>Note)</small>	100 (Input unit + end block)

Note) Not including the DIN rail weight.

Input Block Specifications

Applicable sensor	Current source type (PNP output) or Current sink type (NPN output)
Sensor connector	M8 connector (3 pins) or, M12 connector (4 pins)
Number of inputs	2 inputs/8 inputs (M8 only)
Rated voltage	24 VDC
Indication	Green LED
Insulation	None
Sensor supply current	Maximum 30 mA/Sensor
Enclosure	IP65
Weight (g)	[For M8: 20] [For M12: 40] [8 point integrated type, for M8: 55]



SI Unit

How to Order

EX500 – Q001

• Applicable GW unit

Nil	DeviceNet PROFIBUS-DP
-X1	Remote I/O (RIO)

Specifications

Connection block	Solenoid valve (single, double) Relay output module (1 output, 2 outputs)
Communication connector	M12 connector (8 pins, plug, socket)
Number of connection block stations	Double solenoid valve Relay output module (2 points): Maximum 8 stations Single solenoid valve Relay output module (1 point): Maximum 16 stations
Block supply voltage	24 VDC
Block supply current	0.65 A maximum
Current consumption	100 mA or less (at rated voltage)
Weight (g)	115

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

Cable

How to Order Cable with M12 Connector

EX500 – AC 030 – SSPS



Cable length

003	0.3 m
005	0.5 m
010	1 m
030	3 m
050	5 m

Connector specifications

SSPS	Socket side: Straight Plug side: Straight
SAPA	Socket side: Angle Plug side: Angle

How to Order Power Cable with Connector

EX500 – AP 050 – S

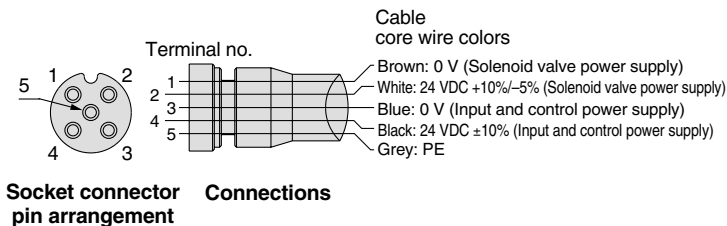
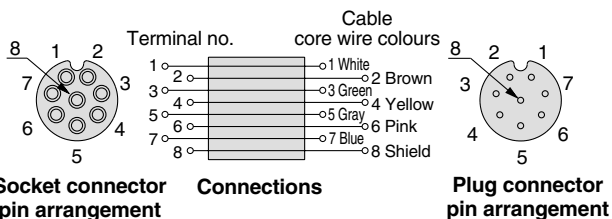


Cable length

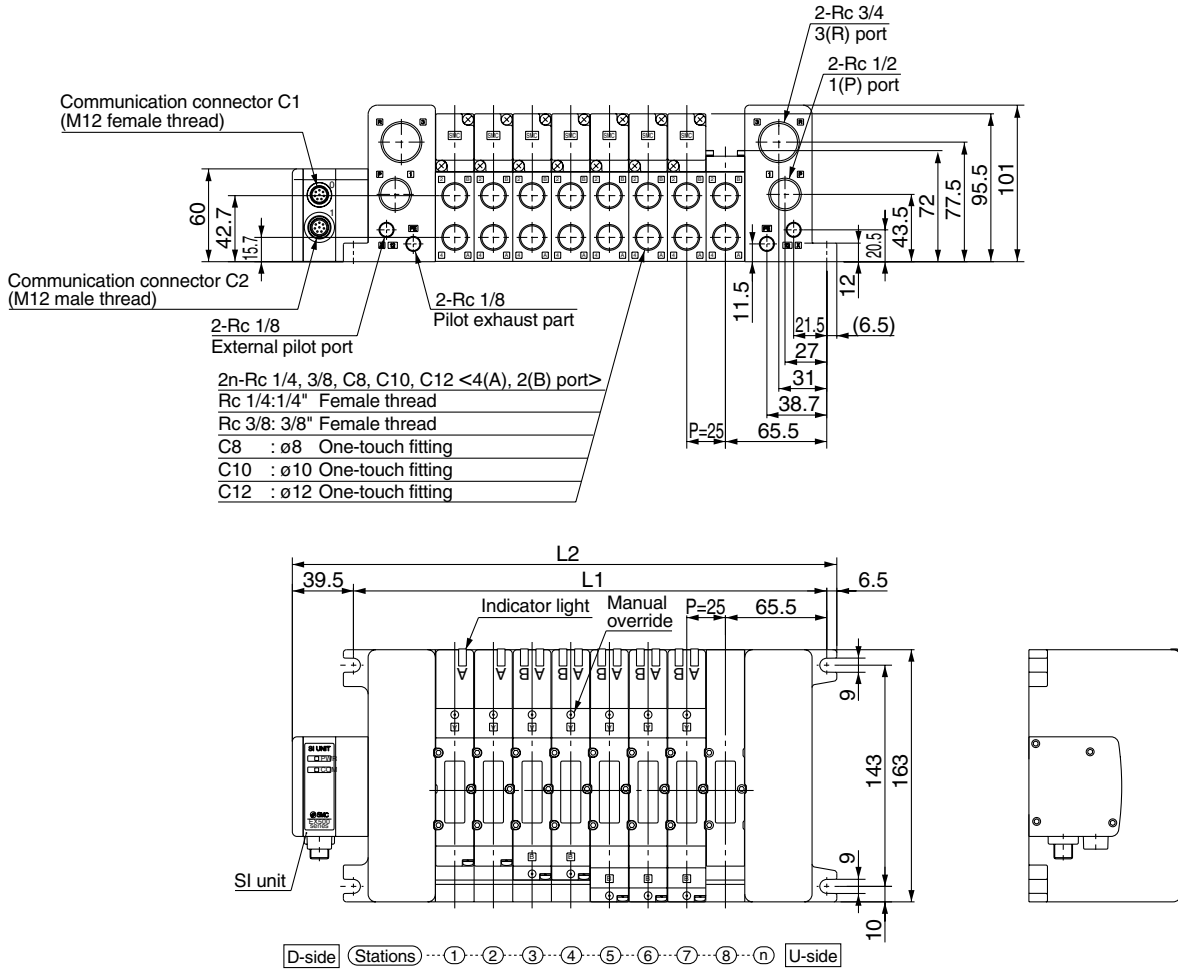
010	1 m
050	5 m

Connector specifications

S	Straight
A	Angle



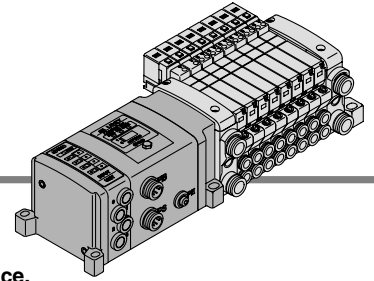
VV5QC41
SA1 Kit (Serial transmission kit: EX500)



Formulas
 $L1 = 25n + 106$ (Maximum 16 single wiring stations) n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	177	202	227	252	277	302	327	352	377	402	427	452	477	502	527	552

S VQC1000/2000/4000
Kit (Serial Transmission Kit) for I/O IP67 compliant



Compatible network **DeviceNet/PROFIBUS-DP/CC-Link**

• The serial transmission system greatly reduces connection work, minimizes wiring, and saves space.

SI unit for DeviceNet/PROFIBUS-DP/CC-LINK

As a DeviceNet/PROFIBUS-DP/CC-LINK slave unit, this kit is capable of up to 32 points of solenoid valve ON and OFF control. Furthermore, by connecting an input block, a maximum 32 sensor signal inputs are possible.

SI unit for AS-i

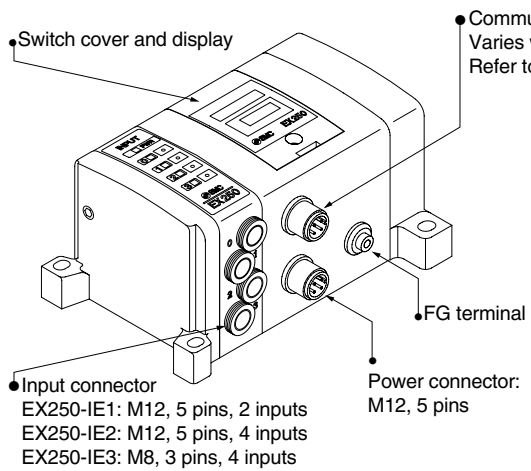
As a AS-i slave unit, this kit is capable of up to 4 or 8 points of solenoid valve ON and OFF control. Furthermore, by connecting an input block, a maximum 4 or 8 sensor signal inputs are possible.

Input block

This expansion block connects to the SI unit and allows for sensor input to the auto switches.

Each input block can receive input from up to two or four sensors, and the common can be matched to the sensor by an NPN/PNP selector switch. Input connectors are available in both M8 and M12 types.

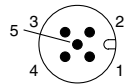
Connector Details



Communication connector

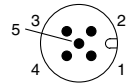
CANopen: Female connector cable: M12 female 5 pins cable with shield (according to ISO11898).

Pos.	Description	Function
1	CAN_SHLD	Shield
2	CAN_V+	Power supply +
3	CAN_GND	Power supply -
4	CAN_H	Bus line (dominant High)
5	CAN_L	Bus line (dominant Low)



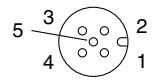
DeviceNet: M12...5 pins (Plug) Example for a cable set with plug / socket: OMRON Corporation DCA1-5CN05F1. Karl Lumberg GmbH: 0935 253 103/...M, RSC RKC 57* ... M. Accessories, bus branch Y: Karl Lumberg GmbH: 0906 UTP 101, Hans Turck GmbH: VB2-FKM-FSM57. Accessories terminating socket with resistor: Hans Turck GmbH: RSE57-TR2, Karl Lumberg GmbH: 0939 CXT 101.

Pos.	Description	Function
1	Drain	Drain / shield
2	V+	Circuit power supply +
3	V-	Circuit power supply -
4	CAN_H	Signal H
5	CAN_L	Signal L



PROFIBUS-DP: M12... 5 pins reserve-keyed (Socket). Example for the corresponding cable sets with plug / socket: Hans Turck GmbH: RSSW-RKSW456-...M; Karl Lumberg GmbH: 0975 254 101/...M. Accessories Bus branch Y: Hans Turck GmbH: VB2/FSW/FKW/FSW45. Accessories terminating resistor: Hans Turck GmbH: RSS4.5-PDP-TR; Karl Lumberg GmbH: 0979PTX101

Pos.	Description	Function
1	VP	Power supply for terminating resistor
2	A-N	Negative for data transfer/reception
3	DGND	Ground for terminating resistor
4	B-P	Positive for data transfer/reception
5	SHIELD	Shield



Circuit diagram Input module (EX250-IE*)

Input connection: M12 ... 5 pins (Socket)
Example for the cable side connection: OMRON Corporation XS2G;
Karl Lumberg GmbH: Series RST5; Franz Binder GmbH: Series 713,763

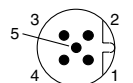
Pos.	Description	Function
1	SW+	Sensor power supply +
2	N.C (SIGNAL)	Open*
3	SW-	Sensor power supply -
4	SIGNAL	Sensor input signal
5	E	Sensor ground connection

* In the 4 input type unit (EX250-IE2), this is the input signal from the second sensor connected.

Power supply

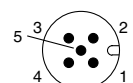
DeviceNet: M12 ... 5 pins reserve-keyed (Plug)
(The configuration of the connection surface area differs from that of the transmission plug)
Example of the cable set with socket: Hans Turck GmbH: WAKW4.5T-2, Franz Binder GmbH: 79-4449-...05.

Pos.	Description	Function
1	SV24V	+24 V solenoid valve
2	SV0V	0V solenoid valve
3	SW24V	+24 V SI and input blocks
4	SW0V	0 V SI and input blocks
5	E	Ground connection



PROFIBUS-DP: M12...5 pins (Plug)
Example of the cable set with socket:
SMC: EX500-AP...S (See page 2-2-25.)

Pos.	Description	Function
1	SV24V	+24 V solenoid valve
2	SV0V	0 V solenoid valve
3	SW24V	+24 V SI and input blocks
4	SW0V	0 V SI and input blocks
5	E	Ground connection



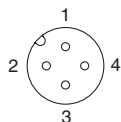
Input connection: M8 ... 3 pins (Socket)
Example for cable side connection: Franz Binder GmbH Series 718, 768
Karl Lumberg GmbH: Series RSMV3



Pos.	Description	Function
1	SW+	Sensor power supply +
3	SW-	Sensor power supply -
4	SIGNAL	Sensor input signal

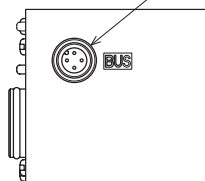
AS-i EX250-SAS7 / EX250-SAS9

Communication connector: M12 male 4 pins

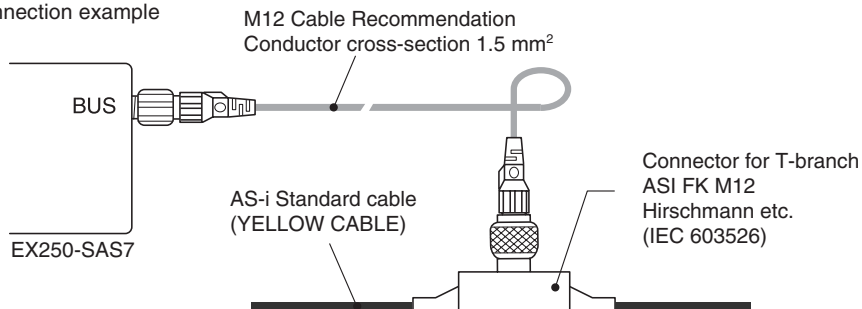


Pos.	Description	Function
1	AS-i +	Positive AS-Interface line
2	RESERVE	RESERVE
3	AS-i -	Negative AS-Interface line
4	RESERVE	RESERVE

Communication connector



Connection example



VQC

SQ

VQ0

VQ4

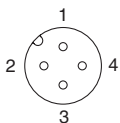
VQ5

VQZ

VQD

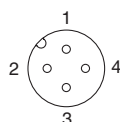
AS-i EX250-SAS3 / EX250-SAS5

Communication connector: M12 male 4 pins



Pos.	Description	Function
1	AS-i +	Positive AS-Interface line
2	0V	Negative output equipment power line
3	AS-i -	Negative AS-Interface line
4	24V	Positive output equipment power line

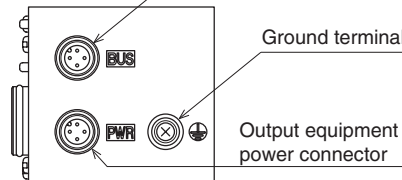
Output equipment power connector: M12 male 4 pins



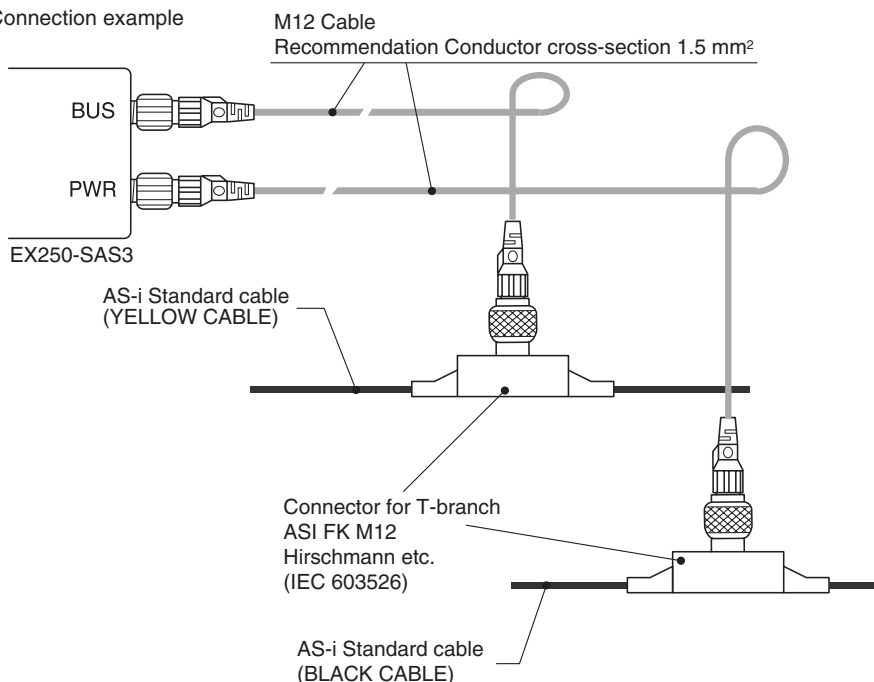
Pos.	Description	Function
1	24V	Positive output equipment power line
2	NC	Not connected
3	0V	Negative output equipment power line
4	NC	Not connected

* Connected inside the SI unit.

Communication connector



Connection example

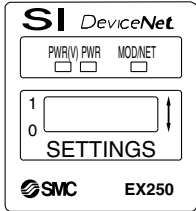


S VQC1000/2000/4000 Kit (Serial transmission kit) for I/O IP67 compliant

Indicator Unit (LED) Description and Its Function

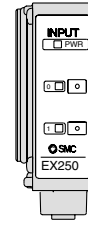
SI unit

DeviceNet (EX250-SDN1)

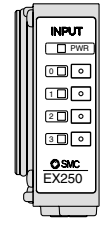


Name	Function
PWR(V)	ON when solenoid valve power supply is turned ON.
PWR	ON when DeviceNet circuit power supply input is turned ON.
MOD/NET	OFF: Power supply off, off line, or when checking duplication of MAC_ID.
	GREEN BLINKING: Waiting for connection (on line).
	GREEN ON: Connection established (on line).
	RED BLINKING: Connection time out (minor communication abnormality).
	RED ON: MAC_ID duplication error, or BUSOFF error (major communication abnormality).

Input block (EX250-IE1/2/3)



2-input type (EX250-IE1)



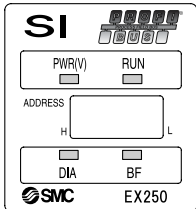
4-input type (EX250-IE2/3)

Description	Function
PWR	ON when sensor power is turned ON.
0 to 1(3)	ON when each sensor input goes ON.



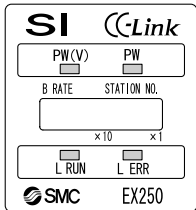
* Please contact your SMC representative for specifications and handling precautions.

PROFIBUS-DP (EX250-SPR1)



Name	Function
PWR(V)	GREEN ON when solenoid valve power supply is turned ON. GREEN OFF when the power supply voltage is less than 19 V.
RUN	GREEN ON when operating (SI unit power supply is ON).
DIA	RED ON when self diagnosis device detects abnormality.
BF	RED ON for BUS abnormality.

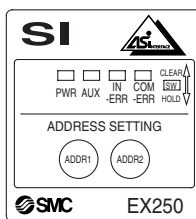
CC-Link (EX250-SMJ2)



Name	Function
PW	ON: Input and control unit power supply ON. OFF: Input and control unit power supply OFF.
PW(V)	ON: Solenoid valve power supply ON. OFF: Solenoid valve power supply voltage is less than 19 V.
L RUN	ON: Normal traffic OFF: Traffic disconnected (Timeover error)
L ERR	ON: Traffic error BLINKING: Station or baud rate switch is set while the power supply is ON. OFF: Normal traffic

When the data link is normal, PW, PW (V) and L RUN are ON.

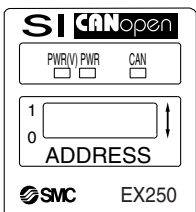
AS-i (EX250-SAS□)



Name	LED Condition	Contents
PWR	Green Light	In time of power supply for AS-Interface line is turned on.
AUX	Green Light	In time of auxiliary power supply for output equipment is turned on.
IN-ERR	Red Light	In time of input power is detected over current. (Lights off at normal condition)
COM-ERR	Red Light	In time of communication error. (Lights off at normal condition)
	Red Blink	In time of peripheral equipment error. (Over current of input power, blowing the fuse etc.)

SI unit

CANopen (EX250-SCA1)

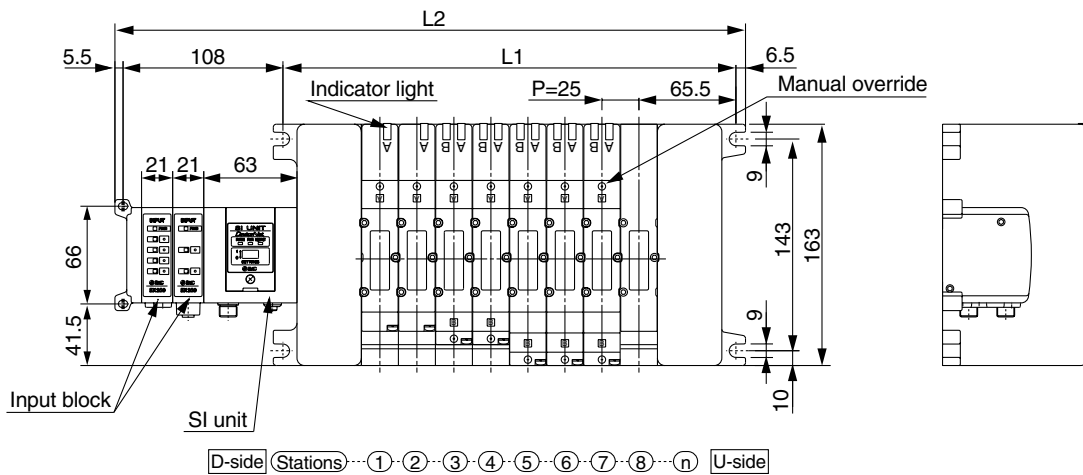
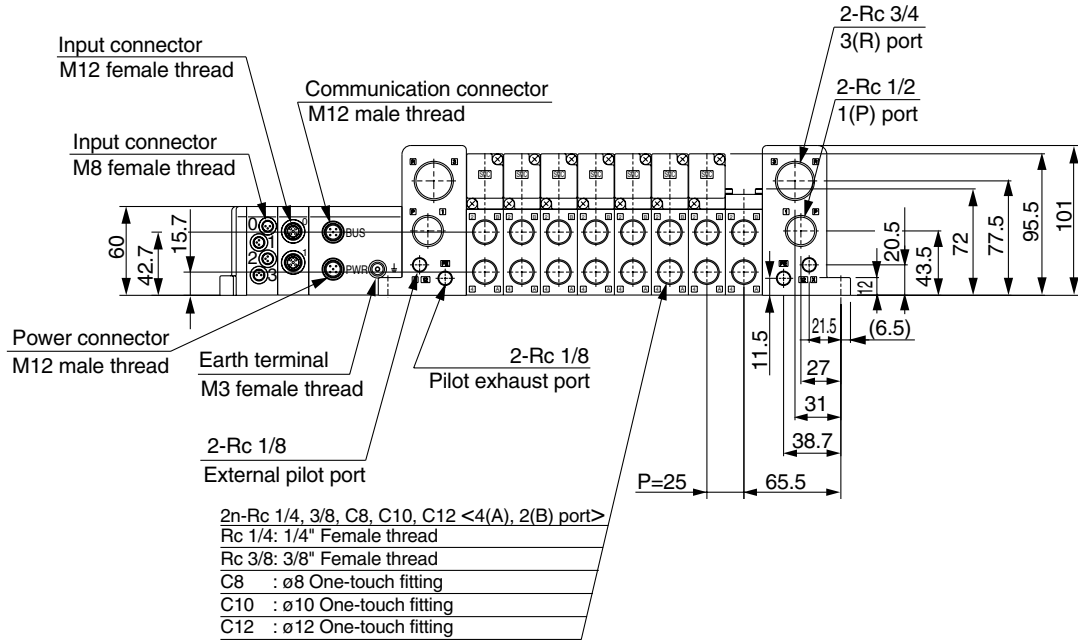


Name	LED Condition	Contents
PWR(V)	Green Light	Illuminates when power for solenoid valves is supplied
	Green Light	Illuminates when power for CANopen line is supplied
PWR	Green Light	Illuminates when SI unit is in the Operational state
	Green Light (Blinking)	SI unit is in the Pre-operational state
	Green Light (Single flash)	Single flash when SI unit is in Stopped state
	Red Light (Single flash)	Single flash when CAN controller error occurs
	Red Light (Double flash)	Double flash when Error Control Event occurs
	Green/Red Light (flickering)	Flickering when SI unit is in Configuration mode (LSS services)
	Red Light	Red Light SI unit is in "Bus OFF" state

Series VQC

S VQC1000/2000/4000 Kit (Serial transmission kit) for I/O IP67 compliant

VV5QC41
S Kit
(Serial transmission kit: EX250)



Formulas

$L1 = 25n + 106$ (Maximum 16 single wiring stations)

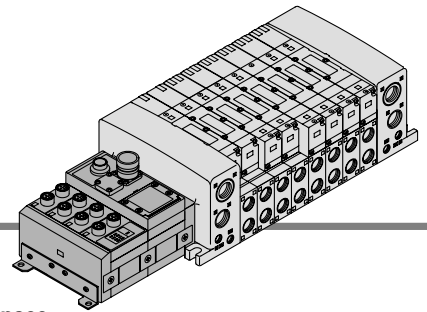
* $L2$: For one input block. Add 21 mm for each additional input block.

n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	230	255	280	305	330	355	380	405	430	455	480	505	530	555	580	605

Series VQC

S VQC4000 Kit (Serial transmission kit) for I/O IP65 compliant



Compatible network **DeviceNet/PROFIBUS-DP**

• The serial transmission system greatly reduces connection work, minimizes wiring, and saves space.

DeviceNet/PROFIBUS-DP compatible SI unit

As a DeviceNet/PROFIBUS-DP slave unit, this kit is capable of solenoid valve ON and OFF control up to 32 points.

Furthermore, by connecting an input block, up to 32 sensor signal inputs are possible.

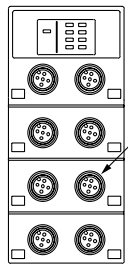
Input block

This expansion block connects to the SI unit and allows for sensor input to the auto switches.

Each input block can receive input from up to 8 sensors, and the common can be matched to the sensor by an NPN/PNP selector switch.

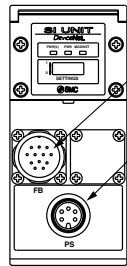
Connector Details

Input block



Input connector

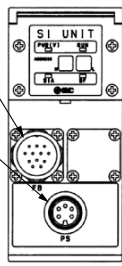
SI unit (DeviceNet)



Communication connector

Power connector

SI unit (PROFIBUS-DP)



• **Communication connector (PROFIBUS-DP):**

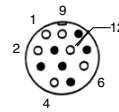
CONINVERS GmbH RC-2RS1N12, 12 pins

Cable side connector example: Siemens AG 6ES5 760-2CB11

No.	Description	Function
1	M5V	GND Terminal
2	A	Signal -N
4	B	Signal -P
6	+5V	Terminal +5V
9	SHIELD	Shield ground
12	RTS	Optical fiber (reserve)

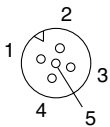
• Pin no. 3, 5, 7, 8, 10 and 11 marked with "●" are open.

* The connector configuration and the pin arrangement are compatible with Siemens AG ET200C.



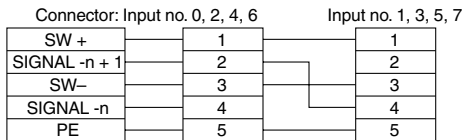
• **Input connector: M12, 5 pins (OMRON Corporation XS2F compatible) x 8 pcs.**

Cable side connector example: OMRON Corporation XS2G



No.	Description	Function
1	SW +	(+) Sensor power supply
2	N.C.	Open*
3	SW -	(-) Sensor power supply
4	SIGNAL	Sensor input signal
5	PE	Protective sensor ground

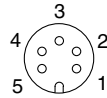
* The second pin of the connector with input no. 0, 2, 4, 6 (the connector at the right side of the input block) is connected internally to the fourth pin (sensor input no.) of the connector with input no. 1, 3, 5, 7. This makes it possible to directly input two inputs that are combined together by the common connector.



• **Power connector: Franz Binder GmbH Series 723, 5 pins (72309-0115-80-05)**

Cable side connector example: Franz Binder GmbH 72309-0114-70-15, etc.

* DIN type 5 pins

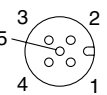


No.	Description	Function
1	SV24V	For solenoid valve +24V
2	SV0V	For solenoid valve +0V
3	PE	Protective ground
4	SW24V	For solenoid valve +24V
5	SW0V	For solenoid valve +0V

• **Communication connector (DeviceNet): M12, 5 pins (for DeviceNet only)**

Example of corresponding cable assemblies with connector:

OMRON Corporation DCA1-5CN05F1, Karl Lumberg GmbH & Co. KG RKT5-56.



No.	Description	Function
1	Drain	Drain/Shield
2	V +	(+) Circuit power supply
3	V -	(-) Circuit power supply
4	CAN_H	Signal H
5	CAN_L	Signal L

Compatible with DeviceNet specification Micro Style connector.

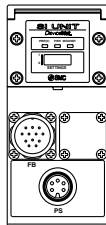
Caution

When IP65 or equivalent enclosures are required, install a waterproof cover on the input connector that is not being used. Order waterproof covers separately.

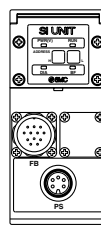
Example: OMRON Corporation XS2Z-12

Indicator Unit (LED) Description and Its Function

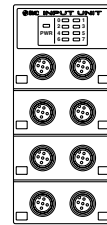
■ **SI unit (DeviceNet)**



■ **SI unit (PROFIBUS-DP)**



■ **Input block**

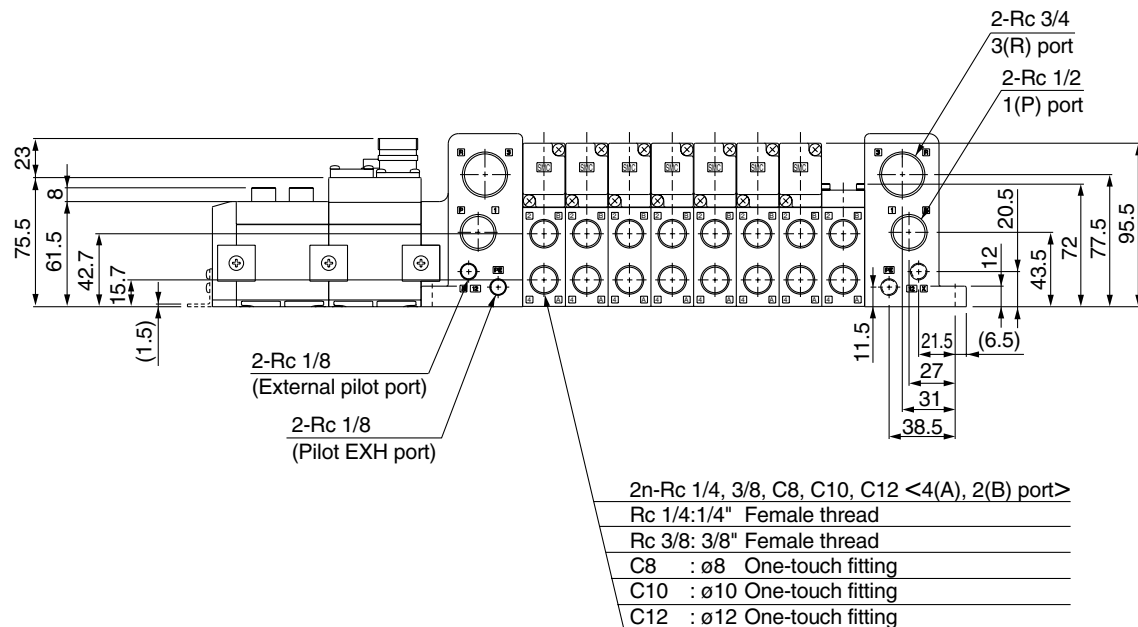


Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON.
PWR	ON when DeviceNet circuit power supply input is turned ON.
MOD/NET	OFF: Power supply off, off line, or when checking duplication of MAC_ID.
	GREEN BLINKING: Waiting for connection (on line).
	GREEN ON: Connection established (on line).
	RED BLINKING: Connection time out (minor communication abnormality).
	RED ON: MAC_ID duplication error, or BUSOFF error (major communication abnormality).

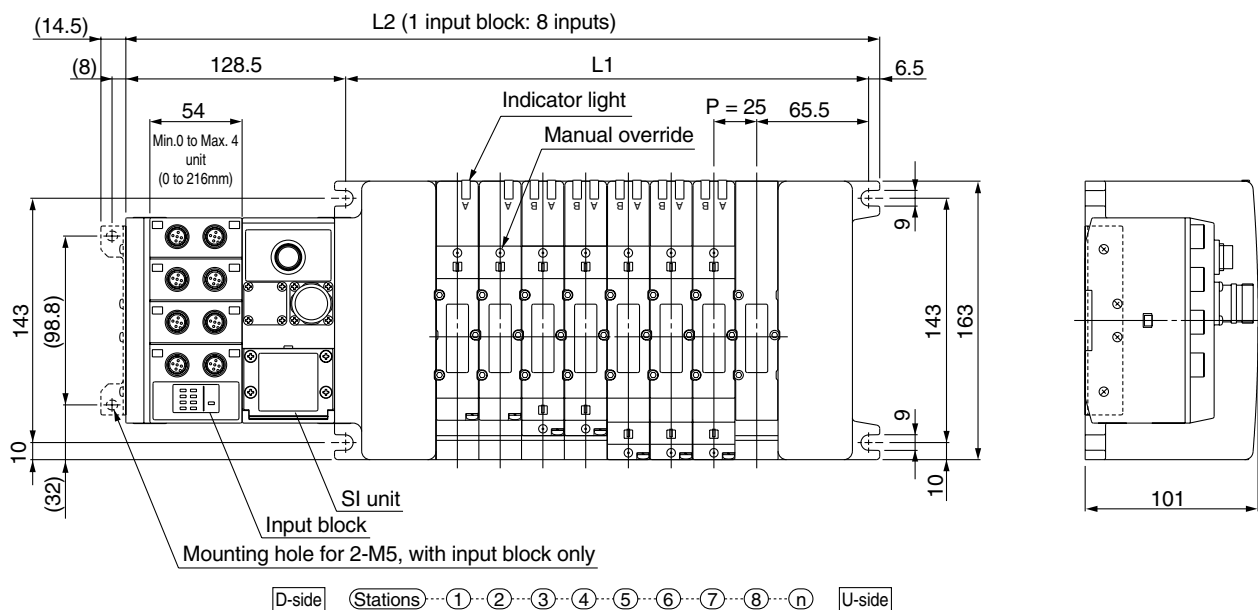
Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON. OFF when the power supply voltage is less than 19V.
RUN	ON when operating (SI unit power supply is ON).
DIA	ON when self diagnosis device detects abnormality.
BF	ON for BUS abnormality.

Description	Function
PWR	ON when sensor power is turned ON.
	OFF when short circuit protection is working.
0 to 7	ON when each sensor input goes ON.

VV5QC41
S Kit (Serial transmission kit: EX240)



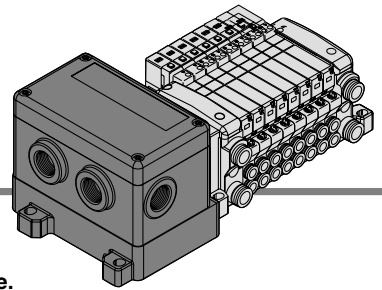
- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD



Formulas: L1 = 25n + 106, L2 = 25n + 241 (For 1 input block. For each additional input block, add 54 mm.) n: Stations (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	266	291	316	341	366	391	416	441	466	491	516	541	566	591	616	641

S VQC1000/2000/4000
Kit (Serial transmission kit) for I/O IP67 compliant



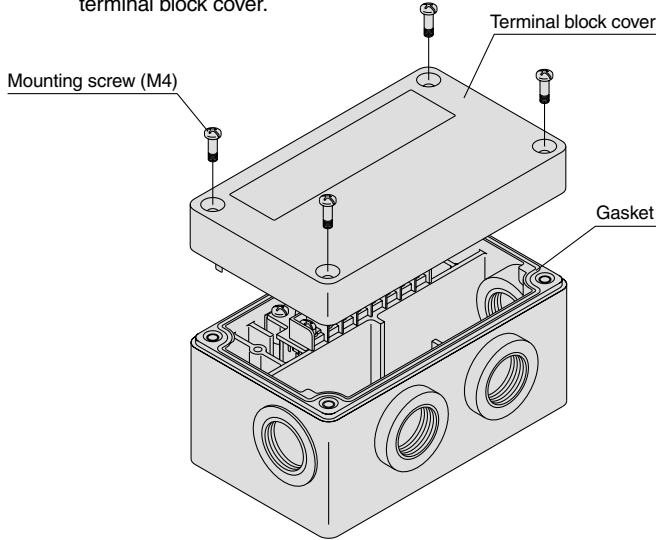
Compatible network **CC-Link**

- The serial transmission system greatly reduces connection work, minimizes wiring, and saves space.

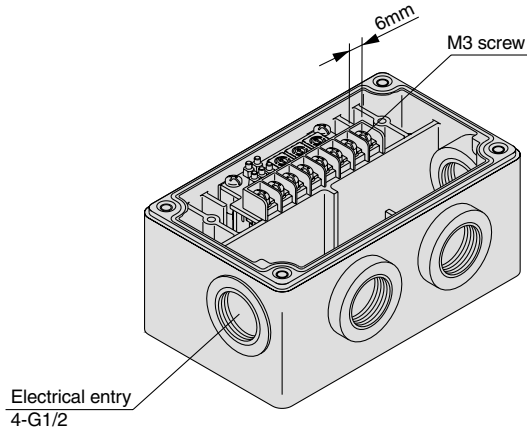
Terminal Block Connection

Step 1. How to remove terminal block cover

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



Step 2. Wire the cables according to the terminal block specifications below. Pay attention to the wire bound positions.



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.

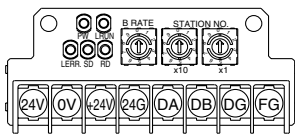
Proper tightening torque (N·m)
0.7 to 1.2

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

* For detailed specifications and handling, refer to the operation manual provided by SMC.

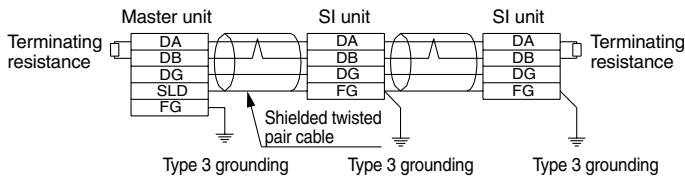
Terminal Block Details

• Terminal block LED descriptions



Description	Function
PW	ON when transmission power supply is ON. OFF when transmission power supply is OFF.
L RUN	ON when normal data is received.
SD	ON when data is sent.
RD	ON when data is received.
L ERR.	ON for transmission error and incorrect settings. BLINKING for change in station or transmission speed settings.

• Cable wiring



• Note

- CC-LINK System
 - Master unit: AJ61BT11
 - Master unit: A1SJ61BT11
 - Master unit: AJ61QBT11
 - Master unit: A1SJ61QBT11

- 16 outputs

Series VQC

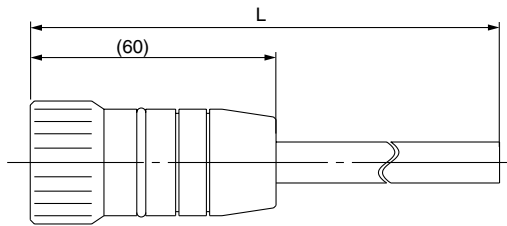
Manifold Option

■ Circular connector/Cable assembly (26 pins)

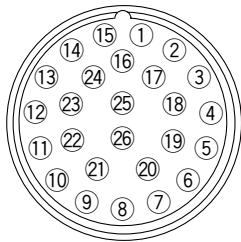
AXT100 – MC26 – □

Lead Wire Length

Part no.	L dimension
AXT100-MC26-015	1.5 m
AXT100-MC26-030	3 m
AXT100-MC26-050	5 m



Plug terminal no.
(arrangement as seen from lead wire side)



Circular Connector Cable Assembly Terminal No.

Terminal no.	Lead wire color	Dot marking
①	Black	None
②	Brown	None
③	Red	None
④	Orange	None
⑤	Yellow	None
⑥	Pink	None
⑦	Blue	None
⑧	Purple	White
⑨	Gray	Black
⑩	White	Black
⑪	White	Red
⑫	Yellow	Red
⑬	Orange	Red
⑭	Yellow	Black
⑮	Pink	Black
⑯	Blue	White
⑰	Purple	None
⑱	Gray	None
⑲	Orange	Black
⑳	Red	White
㉑	Brown	White
㉒	Pink	Red
㉓	Gray	Red
㉔	Black	White
㉕	White	None

Note) Terminal no. ㉖ is connected to ㉕ inside the connector.

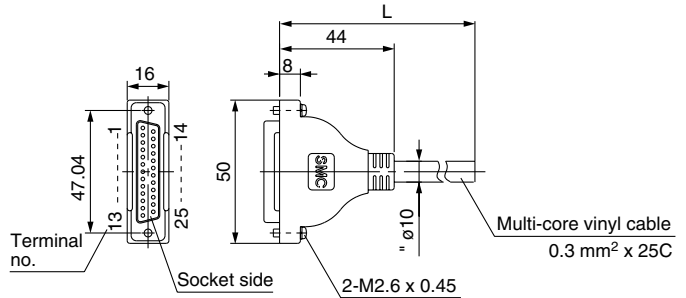
■ D-sub connector/Cable assembly (25 pins)

AXT100 – DS25 – □

Lead Wire Length

Part no.	L dimension
AXT100-DS25-015	1.5 m
AXT100-DS25-030	3 m
AXT100-DS25-050	5 m

When a commercially available connector is required, use a 25 pin female connector conforming to MIL-C24308.



D-sub Connector Cable Assembly Terminal No.

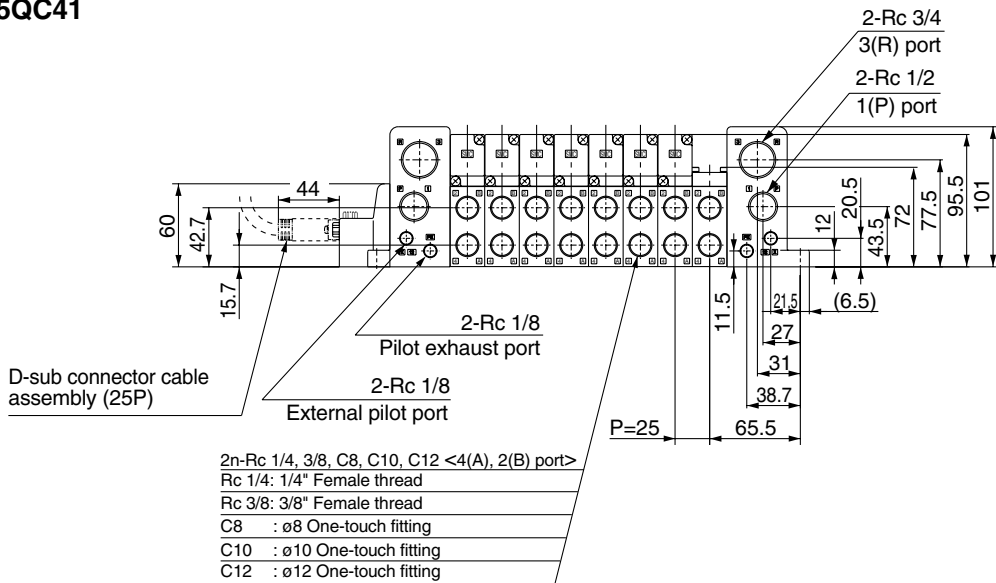
Terminal no.	Lead wire color	Dot marking
①	Black	None
②	Brown	None
③	Red	None
④	Orange	None
⑤	Yellow	None
⑥	Pink	None
⑦	Blue	None
⑧	Purple	White
⑨	Gray	Black
⑩	White	Black
⑪	White	Red
⑫	Yellow	Red
⑬	Orange	Red
⑭	Yellow	Black
⑮	Pink	Black
⑯	Blue	White
⑰	Purple	None
⑱	Gray	None
⑲	Orange	Black
⑳	Red	White
㉑	Brown	White
㉒	Pink	Red
㉓	Gray	Red
㉔	Black	White
㉕	White	None

Circular Connector, D-sub Connector Cable Assembly Electric Characteristics

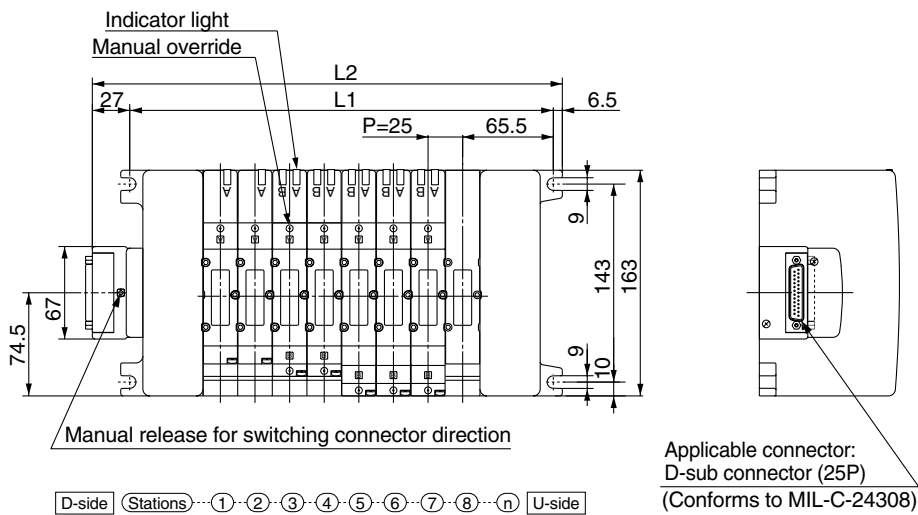
Item	Characteristics
Conductor resistance W/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance, M/km, 20°C	5 or less

Note) The minimum inside bending radius for each cable is 20 mm.

VV5QC41



- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD



Formulas
 $L1 = 25n + 106$ (Maximum 16 single wiring stations)
 $L2 = 25n + 139.5$

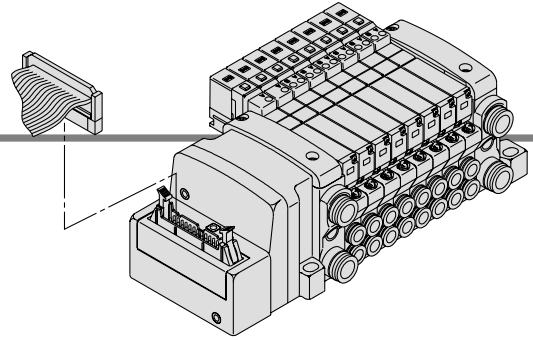
n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	164.5	189.5	214.5	239.5	264.5	289.5	314.5	339.5	364.5	389.5	414.5	439.5	464.5	489.5	514.5	539.5

Series VQC

P VQC1000/2000/4000
Kit (Flat ribbon cable kit) IP40 compliant

- Using our flat ribbon cable for electrical connections greatly reduces labour, while it also minimizes wiring and saves space.
- We use flat ribbon cables whose connectors (26P and 20P) conform to MIL standards, and are therefore widely compatible with many standard commercial models.
- Top or side entry for the connector can be changed freely, allowing for changes even after mounting, to meet any changing needs for space.



Electrical Wiring Specifications

Flat ribbon cable connector

Double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. Mixed single and double wiring are available as options. Refer to special wiring specifications (options) below.

Connector terminal number

Triangle mark indicator position

<26P>			<20P>		
Station	Terminal no.	Polarity	Station	Terminal no.	Polarity
Station 1	SOL. A 1	(-) (+)	Station 1	SOL. A 1	(-) (+)
	SOL. B 2	(-) (+)		SOL. B 2	(-) (+)
Station 2	SOL. A 3	(-) (+)	Station 2	SOL. A 3	(-) (+)
	SOL. B 4	(-) (+)		SOL. B 4	(-) (+)
Station 3	SOL. A 5	(-) (+)	Station 3	SOL. A 5	(-) (+)
	SOL. B 6	(-) (+)		SOL. B 6	(-) (+)
Station 4	SOL. A 7	(-) (+)	Station 4	SOL. A 7	(-) (+)
	SOL. B 8	(-) (+)		SOL. B 8	(-) (+)
Station 5	SOL. A 9	(-) (+)	Station 5	SOL. A 9	(-) (+)
	SOL. B 10	(-) (+)		SOL. B 10	(-) (+)
Station 6	SOL. A 11	(-) (+)	Station 6	SOL. A 11	(-) (+)
	SOL. B 12	(-) (+)		SOL. B 12	(-) (+)
Station 7	SOL. A 13	(-) (+)	Station 7	SOL. A 13	(-) (+)
	SOL. B 14	(-) (+)		SOL. B 14	(-) (+)
Station 8	SOL. A 15	(-) (+)	Station 8	SOL. A 15	(-) (+)
	SOL. B 16	(-) (+)		SOL. B 16	(-) (+)
Station 9	SOL. A 17	(-) (+)	Station 9	SOL. A 17	(-) (+)
	SOL. B 18	(-) (+)		SOL. B 18	(-) (+)
Station 10	SOL. A 19	(-) (+)	Station 10	COM 19	(+) (-)
	SOL. B 20	(-) (+)		COM 20	(+) (-)
Station 11	SOL. A 21	(-) (+)			
	SOL. B 22	(-) (+)			
Station 12	SOL. A 23	(-) (+)			
	SOL. B 24	(-) (+)			
	COM 25	(+) (-)			
	COM 26	(+) (-)			

Positive COM. spec. Negative COM. spec.

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

Cable Assembly

AXT100-FC¹₂₆₋₂³

(Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to manifold ordering.)

Terminal no. Red 28AWG

30 (20P) 37.5 (26P)

6 (15.6) L

Flat ribbon cable connector assemblies (Option)

Cable length (L)	Part no.	
	26P	20P
1.5 m	AXT100-FC26-1	AXT100-FC20-1
3 m	AXT100-FC26-2	AXT100-FC20-2
5 m	AXT100-FC26-3	AXT100-FC20-3

* When using a standard commercial connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.
* Cannot be used for transfer wiring.

Connector Manufacturers Example:

- Hirose Electric CO., Ltd.
- Sumitomo/3-M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

Special Wiring Specifications (Option)

COM. COM. COM. COM.

26 □ □ 25
24 □ □ 23
22 □ □ 21
20 □ □ 19
18 □ □ 17
16 □ □ 15
14 □ □ 13
12 □ □ 11
10 □ □ 9
8 □ □ 7
6 □ □ 5
4 □ □ 3
2 □ □ 1

(For 26P)

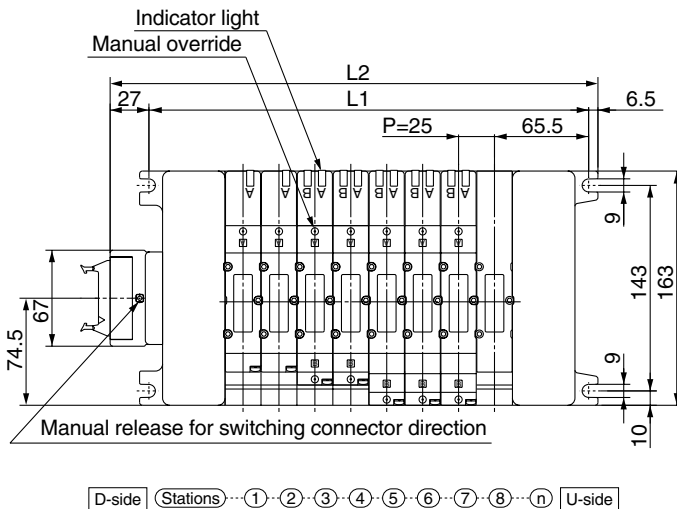
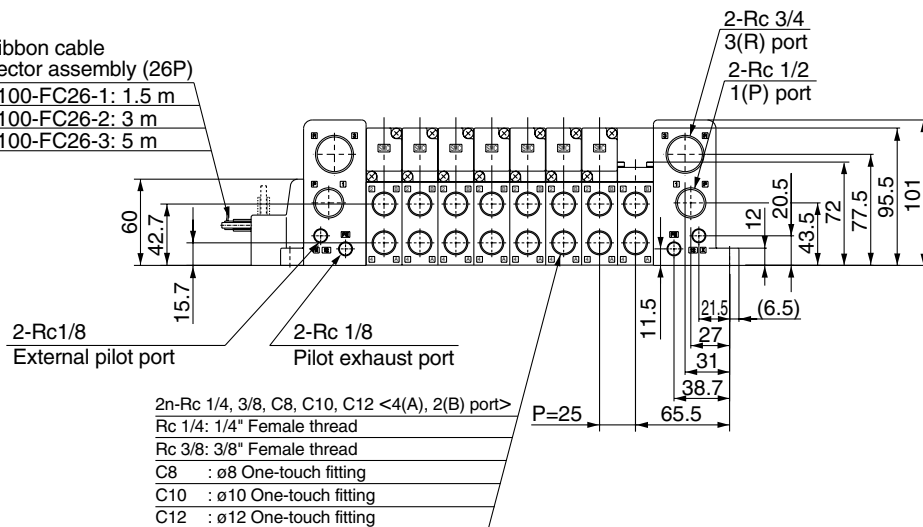
20 □ □ 19
18 □ □ 17
16 □ □ 15
14 □ □ 13
12 □ □ 11
10 □ □ 9
8 □ □ 7
6 □ □ 5
4 □ □ 3
2 □ □ 1

(For 20P)

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 24.

VV5QC41

Flat ribbon cable
connector assembly (26P)
AXT100-FC26-1: 1.5 m
AXT100-FC26-2: 3 m
AXT100-FC26-3: 5 m



Applicable connector:
Flat ribbon cable connector (26P)
(Conforms to MIL-C-83503)

Formulas

$L1 = 25n + 106$ (Maximum 16 single wiring stations)

$L2 = 25n + 139.5$

n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	164.5	189.5	214.5	239.5	264.5	289.5	314.5	339.5	364.5	389.5	414.5	439.5	464.5	489.5	514.5	539.5

VQC

SQ

VQ0

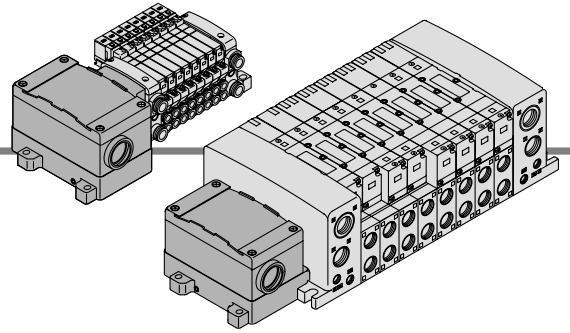
VQ4

VQ5

VQZ

VQD

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

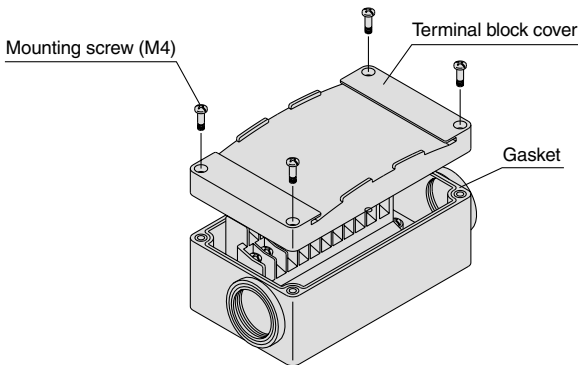


• This kit has a small terminal block inside a junction box. The provision of a G 3/4 electrical entry allows connection of conduit fittings.

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

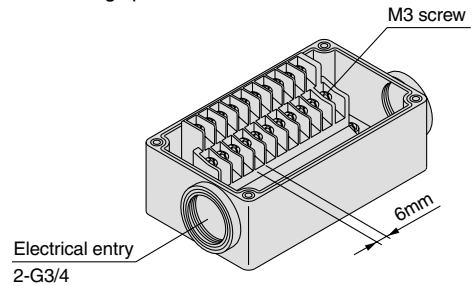
Securely tighten the screws to the torque shown in the table below, after confirming that the gasket is installed correctly.

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)

	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.	(+) (-)

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.

Special Wiring Specifications (Option)

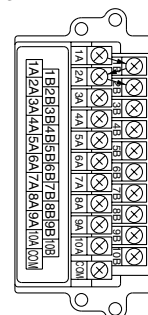
Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 20.

1. How to order

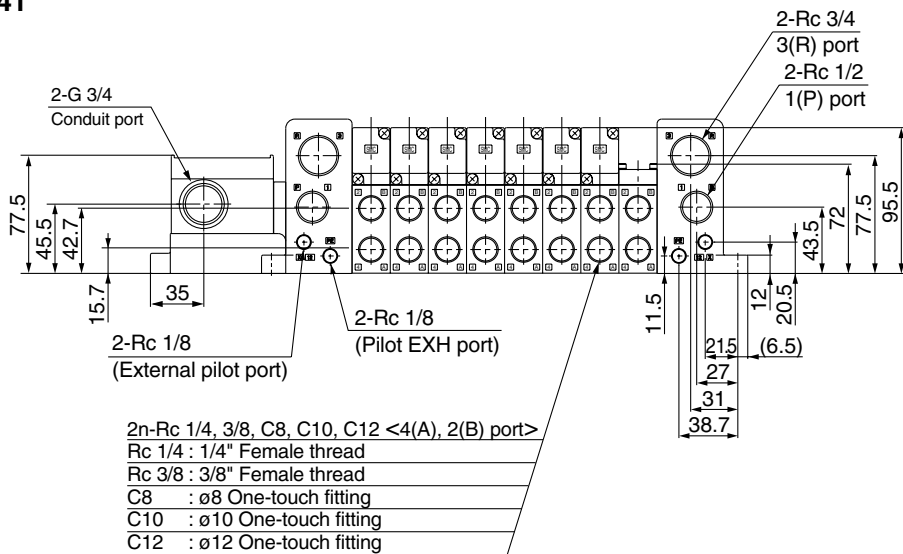
Indicate option symbol "-K" in the manifold part number and be sure to specify station positions for single or double wiring on the manifold specification sheet.

2. Wiring specifications

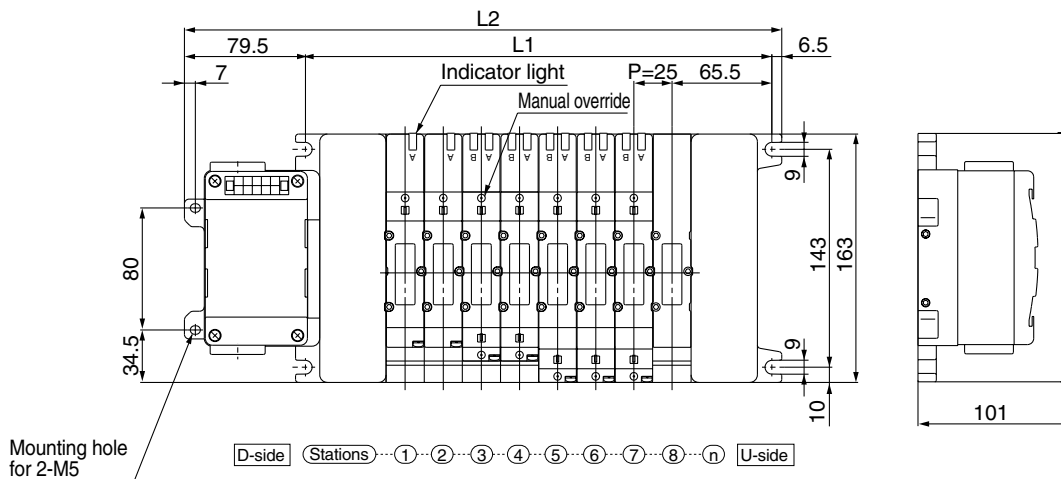
Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.



VV5QC41



- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD



Formulas

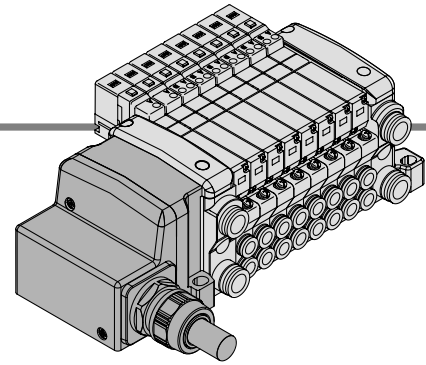
$L1 = 25n + 106$ (Maximum 16 single wiring stations)
 $L2 = 25n + 192$

n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	217	242	267	292	317	342	367	392	417	442	467	492	517	542	567	592

Series VQC

L VQC1000/2000/4000
Kit (Lead wire kit) IP67 compliant

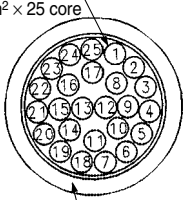


- Direct electrical entry type.
- IP67 enclosure is available with use of cables with sheath and waterproof connectors.

Electrical Wiring Specifications

Lead wire specifications

Lead wire
0.3 mm² × 25 core



As the standard electrical wiring specification used is for 12 stations or less, double wiring (connected to SOL. A and SOL. B) is used for the internal wiring of each station regardless of valve and option types. Mixed single and double wiring are available as options. Refer to special wiring specifications (options) below.

Lead wire length

VV5QC11-08 C6 LD 0

Lead wire length

0	0.6 m
1	1.5 m
2	3.0 m

Electrical characteristics

Item	Characteristic
Conductor resistance Ω/km, 20°C	65 or less
Withstand pressure V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or more

Note) Cannot be used for transfer wiring. The minimum bending radius for cables is 20 mm.

	Terminal no.	Polarity	Lead wire colour	Dot marking
Station 1	SOL. A 1	(-) (+)	Black	None
	SOL. B 14	(-) (+)	Yellow	Black
Station 2	SOL. A 2	(-) (+)	Brown	None
	SOL. B 15	(-) (+)	Pink	Black
Station 3	SOL. A 3	(-) (+)	Red	None
	SOL. B 16	(-) (+)	Blue	White
Station 4	SOL. A 4	(-) (+)	Orange	None
	SOL. B 17	(-) (+)	Purple	None
Station 5	SOL. A 5	(-) (+)	Yellow	None
	SOL. B 18	(-) (+)	Grey	None
Station 6	SOL. A 6	(-) (+)	Pink	None
	SOL. B 19	(-) (+)	Orange	Black
Station 7	SOL. A 7	(-) (+)	Blue	None
	SOL. B 20	(-) (+)	Red	White
Station 8	SOL. A 8	(-) (+)	Purple	White
	SOL. B 21	(-) (+)	Brown	White
Station 9	SOL. A 9	(-) (+)	Grey	Black
	SOL. B 22	(-) (+)	Pink	Red
Station 10	SOL. A 10	(-) (+)	White	Black
	SOL. B 23	(-) (+)	Grey	Red
Station 11	SOL. A 11	(-) (+)	White	Red
	SOL. B 24	(-) (+)	Black	White
Station 12	SOL. A 12	(-) (+)	Yellow	Red
	SOL. B 25	(-) (+)	White	None
	COM. 13	(+) (-) Note)	Orange	Red

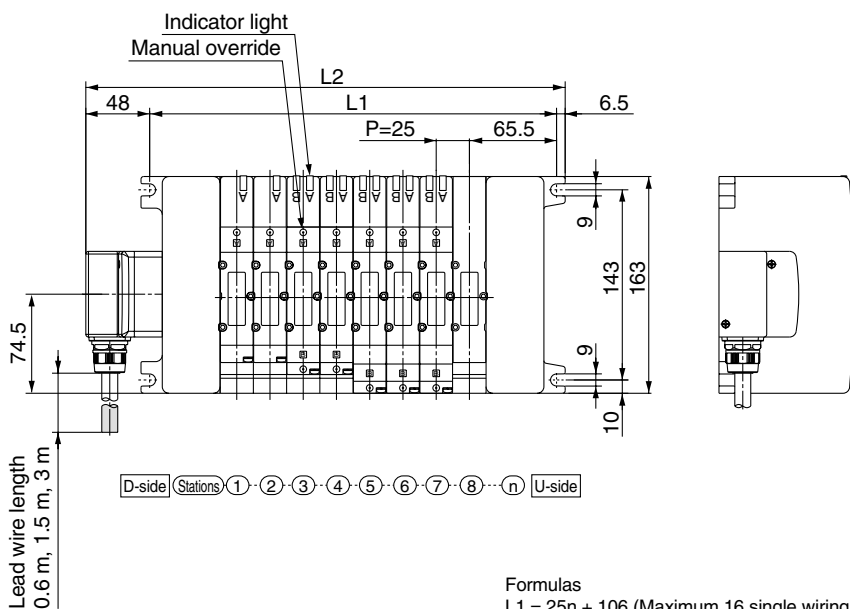
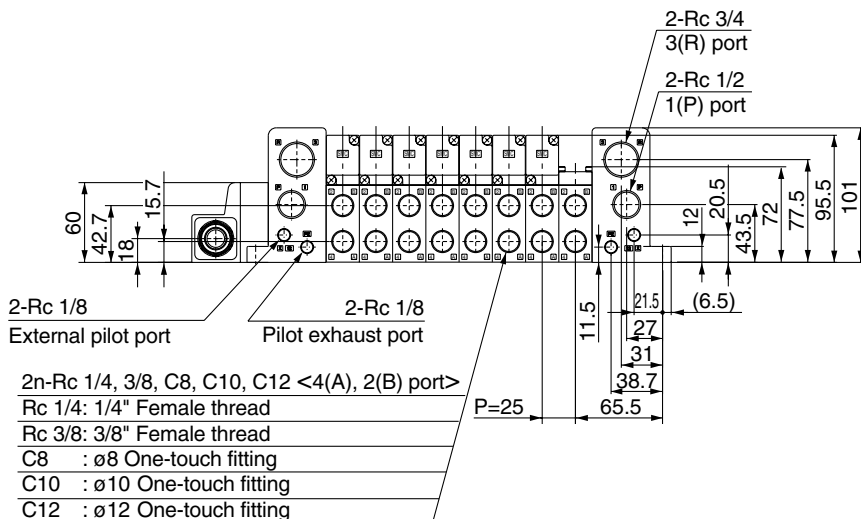
Positive COM. spec. Negative COM. spec.

Note) When using the negative COM. specification for VQC1000/2000, use valves for 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 24.

VV5QC41



Formulas

$L1 = 25n + 106$ (Maximum 16 single wiring stations)

$L2 = 25n + 160.5$

n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	185.5	210.5	235.5	260.5	285.5	310.5	335.5	360.5	385.5	410.5	435.5	460.5	485.5	510.5	535.5	560.5

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

Series VQC

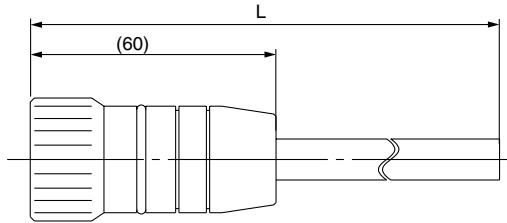
Manifold Option

■ Circular connector/Cable assembly (26 pins)

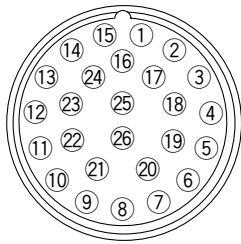
AXT100 – MC26 – □

Lead Wire Length

Part no.	L dimension
AXT100-MC26-015	1.5 m
AXT100-MC26-030	3 m
AXT100-MC26-050	5 m



Plug terminal no.
(arrangement as seen from lead wire side)



Circular Connector Cable Assembly Terminal No.

Terminal no.	Lead wire color	Dot marking
①	Black	None
②	Brown	None
③	Red	None
④	Orange	None
⑤	Yellow	None
⑥	Pink	None
⑦	Blue	None
⑧	Purple	White
⑨	Gray	Black
⑩	White	Black
⑪	White	Red
⑫	Yellow	Red
⑬	Orange	Red
⑭	Yellow	Black
⑮	Pink	Black
⑯	Blue	White
⑰	Purple	None
⑱	Gray	None
⑲	Orange	Black
⑳	Red	White
㉑	Brown	White
㉒	Pink	Red
㉓	Gray	Red
㉔	Black	White
㉕	White	None

Note) Terminal no. ㉖ is connected to ㉕ inside the connector.

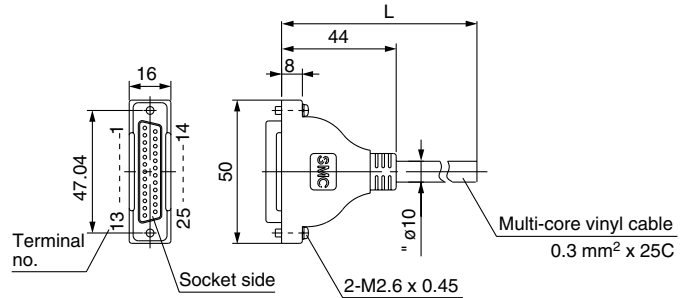
■ D-sub connector/Cable assembly (25 pins)

AXT100 – DS25 – □

Lead Wire Length

Part no.	L dimension
AXT100-DS25-015	1.5 m
AXT100-DS25-030	3 m
AXT100-DS25-050	5 m

When a commercially available connector is required, use a 25 pin female connector conforming to MIL-C24308.



D-sub Connector Cable Assembly Terminal No.

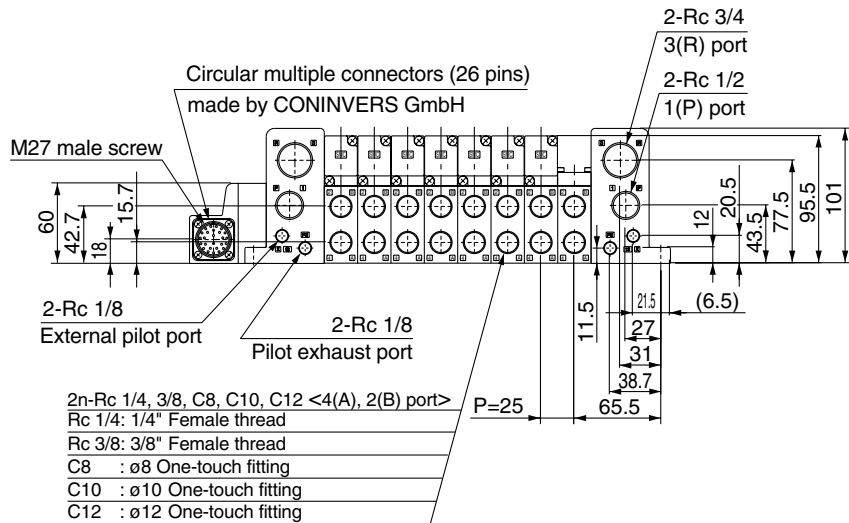
Terminal no.	Lead wire color	Dot marking
①	Black	None
②	Brown	None
③	Red	None
④	Orange	None
⑤	Yellow	None
⑥	Pink	None
⑦	Blue	None
⑧	Purple	White
⑨	Gray	Black
⑩	White	Black
⑪	White	Red
⑫	Yellow	Red
⑬	Orange	Red
⑭	Yellow	Black
⑮	Pink	Black
⑯	Blue	White
⑰	Purple	None
⑱	Gray	None
⑲	Orange	Black
⑳	Red	White
㉑	Brown	White
㉒	Pink	Red
㉓	Gray	Red
㉔	Black	White
㉕	White	None

Circular Connector, D-sub Connector Cable Assembly Electric Characteristics

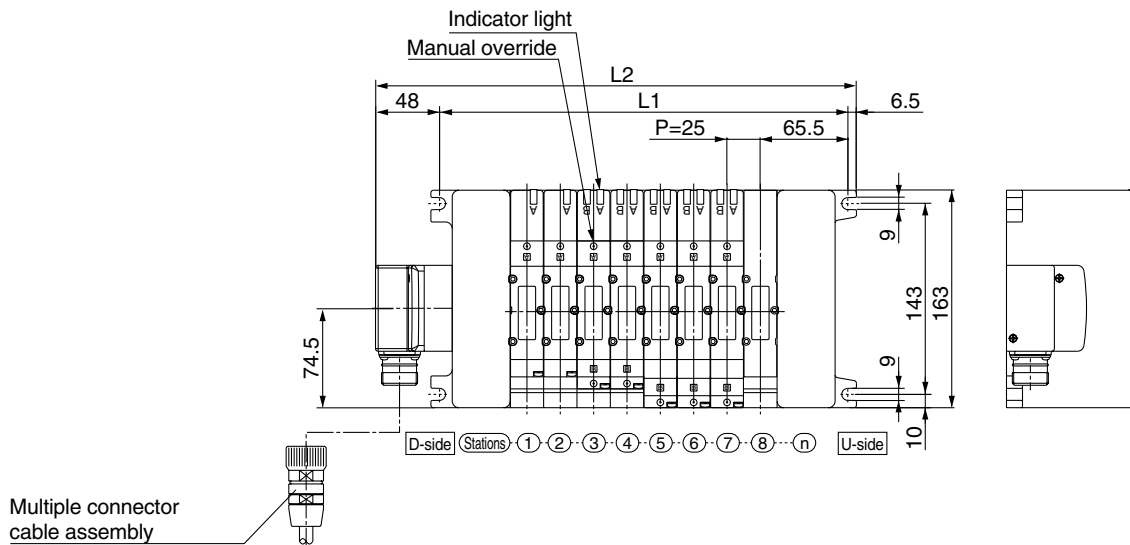
Item	Characteristics
Conductor resistance W/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance, M/km, 20°C	5 or less

Note) The minimum inside bending radius for each cable is 20 mm.

VV5QC41



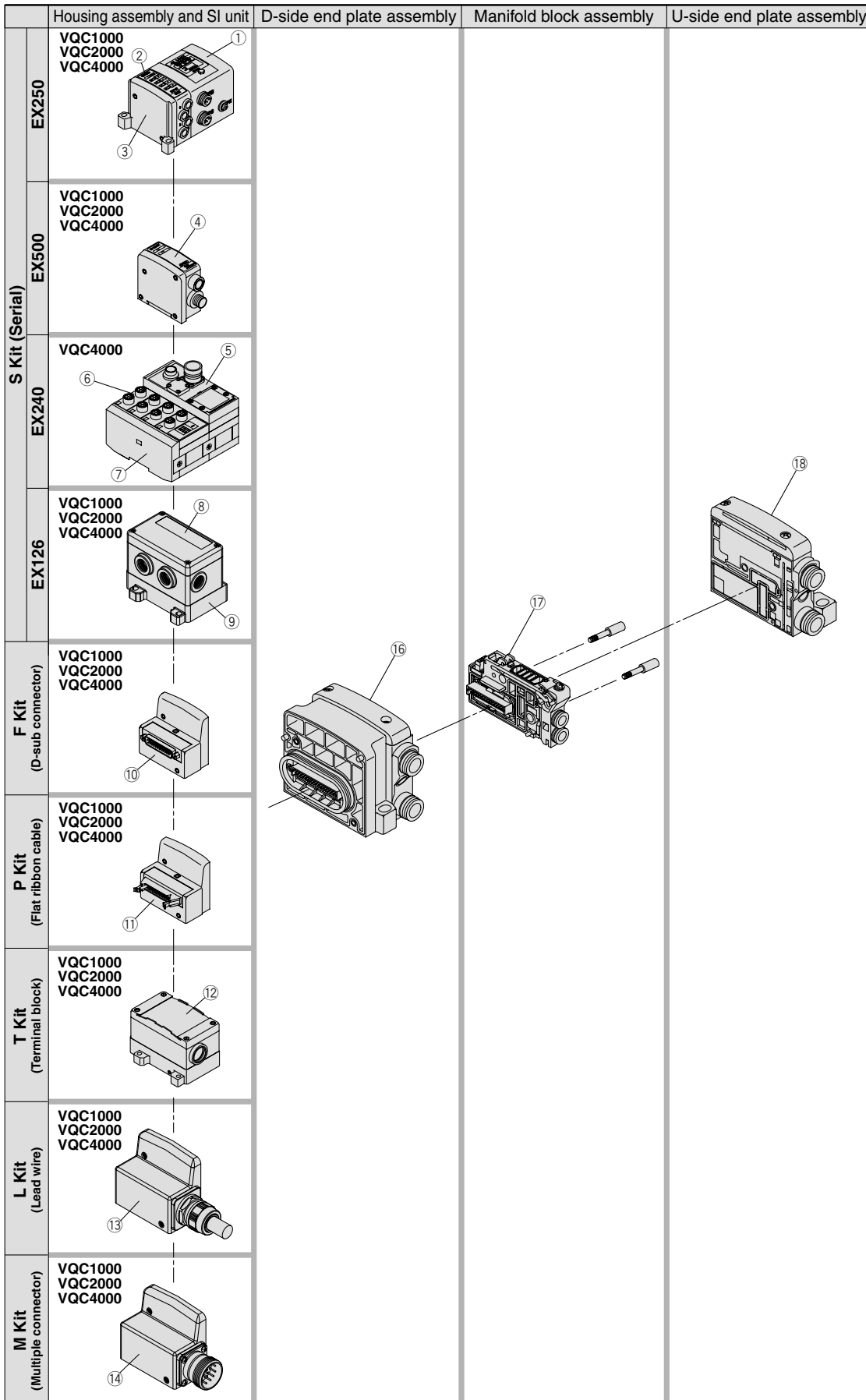
- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD



Formulas
 $L1 = 25n + 106$ (Maximum 16 single wiring stations)
 $L2 = 25n + 160.5$

		n: Stations															
L \ n	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1		131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2		185.5	210.5	235.5	260.5	285.5	310.5	335.5	360.5	385.5	410.5	435.5	460.5	485.5	510.5	535.5	560.5

Exploded View of Manifold



Manifold Assembly Part No.

Housing Assembly and SI Unit/Input Block

No.	Description	Part no.	Note	Applicable model		
				VQC1000	VQC2000	VQC4000
①	SI unit	EX250-SPR1	PROFIBUS-DP (-COM.)	●	●	●
		EX250-SAS□	AS-i (-COM.)	●	●	●
		EX250-SMJ	CC-LINK (+COM.)	●	●	●
		EX250-SDN1	DeviceNet (-COM.)	●	●	●
		EX250-SCA1	CANopen (-COM.)	●	●	●
②	Input block	EX250-IE1	M12, 2 inputs	●	●	●
		EX250-IE2	M12, 4 inputs	●	●	●
		EX250-IE3	M8, 4 inputs	●	●	●
③	End plate assembly	EX250-EA1	Standard	●	●	●
		EX250-EA2	DIN rail mounting	●	●	—
④	SI unit	EX500-Q001	DeviceNet (+COM.)	●	●	●
		EX500-Q001-X1	Remote I/O (+COM.)	●	●	●
		EX500-Q101	DeviceNet / PROFIBUS-DP (-COM.)	●	●	●
		EX500-Q101-X1	Remote I/O (-COM.)	●	●	●
⑤	SI unit	EX240-SDN2	DeviceNet (+COM.)	—	—	●
		EX240-SPR1	PROFIBUS-DP (-COM.)	—	—	●
⑥	Input block	EX240-IE1	M12, 8 inputs	—	—	●
		EX240-EA2	For manifold with input block	—	—	●
⑦	End cover assembly	EX240-EA4	For manifold without input block	—	—	●
		EX126D-SMJ1	CC-LINK (+COM.)	●	●	●
⑧	Terminal plate	VVQC1000-74A-2	For EX126 SI unit mounting	●	●	●
⑩	D-sub connector housing assembly	VVQC1000-F25-1	F kit, 25 pins	●	●	●
⑪	Flat ribbon cable housing assembly	VVQC1000-P26-1	P kit, 26 pins	●	●	●
		VVQC1000-P20-1	P kit, 20 pins	●	●	●
⑫	Terminal block box housing assembly	VVQC1000-T0-1	T kit	●	●	●
⑬	Lead wire housing assembly	VVQC1000-L25-0-1	L kit with 0.6 m lead wire	●	●	●
		VVQC1000-L25-1-1	L kit with 1.5 m lead wire	●	●	●
		VVQC1000-L25-2-1	L kit with 3.0 m lead wire	●	●	●
⑭	Multiple connector housing assembly	VVQC1000-M26-1	M kit 26 pins	●	●	●
⑮	Signal cut block	EX9-SC1-8	Double wiring of 1st to 8th stations	●	●	●
		EX9-SC2-4	Double wiring of 9th to 12th stations	●	●	●

VQC

SQ

VQ0

VQ4

VQ5

VQZ

VQD

D-side end plate assembly

⑮ D-side end plate assembly part no.

VQC1000/2000

VVQC 1 000-3A-1-C8-□

Series	Symbol	VQC1000	VQC2000	Option	Nil	Centralized exhaust
1 VQC1000	C8	●		R	External pilot	
2 VQC2000	C10		●	S	Direct exhaust outlet with built-in silencer	
	N9	●				
	N11		●			

VQC4000

VVQC4000-3A-1-□

Kit type	Thread type
1 S (EX240) kit	Nil Rc
2 F, P, T, S (EX250) kit	F G
3 L, M, S (EX500) kit	T NPT/NPTF

U-side end plate assembly

⑯ U-side end plate assembly part no.

VQC1000/2000

VVQC 1 000-2A-1-C8-□

Series	Port size	Option
1 VQC1000	Symbol	Nil
2 VQC2000	C8	Centralized exhaust
	C10	External pilot
	C12	Direct exhaust outlet with built-in silencer
	N9	
	N11	
	N13	

Supply/Exhaust port entry direction

1	Cylinder port side
2 (Note)	Branch type

Note) VQC2000 only

VQC4000

VVQC4000-2A-1-□

Thread type	Nil	Rc
	F	G
	T	NPT/NPTF

Manifold block assembly

⑰ Manifold block assembly part no.

VVQC 1 000-1A-D-C6-□

Wiring specifications	Option
D Double wiring	Nil None
S Single wiring	B (Note) With back pressure check valve
0 (Note) No wiring	Note) Except VQC4000.
Note) For VQC1000/2000 only.	Thread type (Note)
Series	Nil Rc
1 VQC1000	F G
2 VQC2000	T NPT/NPTF
4 VQC4000	Note) VQC 4000 thread port only
Note) Tie-rods (2 pcs.) for additional stations included.	

Port size

Symbol	Port size	VQC1000	VQC2000	VQC4000
C3	For ø3.2 One-touch fitting	●		
C4	For ø4 One-touch fitting	●	●	
C6	For ø6	●	●	
C8	For ø8		●	●
C10	For ø10			●
C12	For ø12			●
N1	For ø1/8"	●		
N3	For ø5/32"	●	●	
N7	For ø1/4"	●	●	●
N9	For ø5/16"		●	●
N11	For ø3/8"			●
M5	For M5 thread	●		
O2	Rc 1/4"			●
O3	Rc 3/8"			●
B	Rc 1/4" bottom ported			●
C0	Without One-touch fitting	●	●	●