



Series VQC

5 Port Solenoid Valve



Lateral Plug-In Style Manifold
Wide Range of Electrical Entries
Manifold Options Conforming to IP67

Connector Type Manifold

Series VQC1000/2000/4000

Outstanding response times and long service life

(Metal seal: Single type with light/surge voltage suppressor)

VQC1100: 10 ms \pm 2 ms; 200 million cycles

VQC2100: 20 ms \pm 2 ms; 200 million cycles

VQC4100: 17 ms \pm 3 ms; 100 million cycles

Compact and large flow

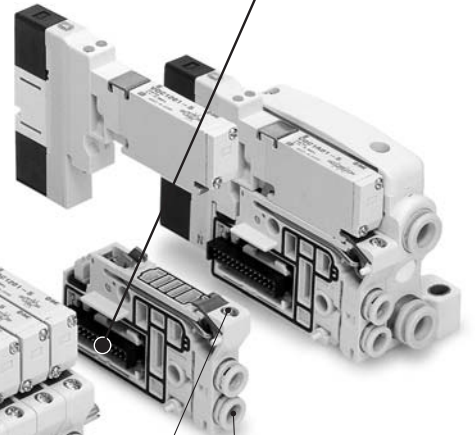
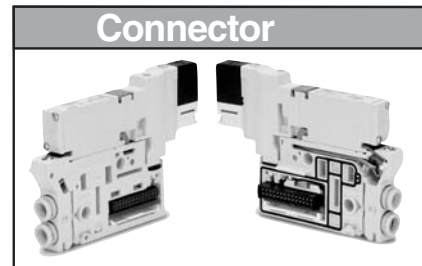
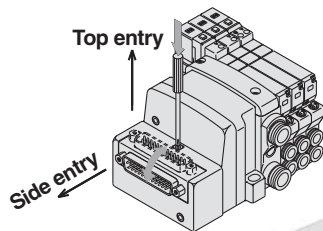
Type (Series)	Manifold pitch (mm)	Flow characteristics ^{Note)}						Applicable cylinder size (mm)
		Metal seal			Rubber seal			
		C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv	
VQC1000	10.5	0.72	0.25	0.18	1.0	0.30	0.25	to ø50
VQC2000	16	2.6	0.15	0.60	3.2	0.30	0.80	to ø80
VQC4000	25	6.9	0.17	1.7	7.3	0.38	2.0	to ø140

Note) Values for 2 position single from 4 to 5 and from 2 to 3. (From A to R1 and from B to R2).

Connector entry direction can be changed with a single push (F, P kit)

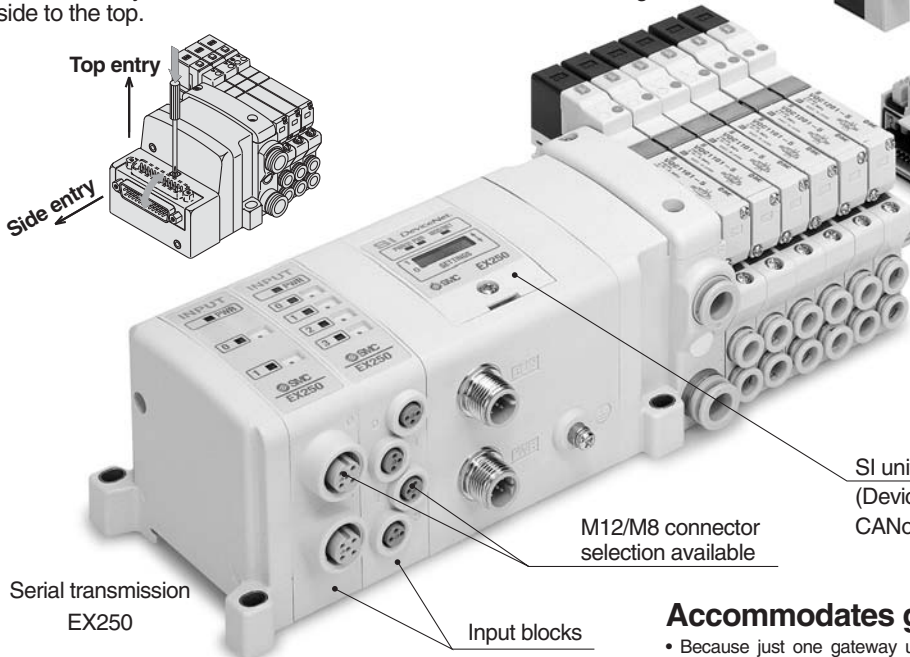
The connector entry direction can be changed from the top to the side by simply pressing the manual release button.

It is not necessary to use the manual release button when switching from the side to the top.



Replaceable One-touch fittings

Single mounting screw, clamp construction

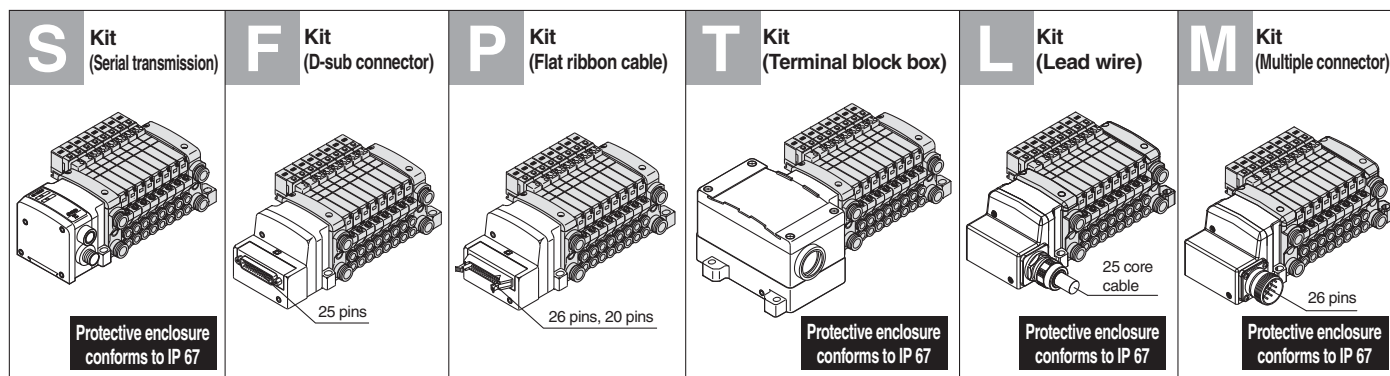


SI unit for I/O
(DeviceNet, PROFIBUS-DP,
CANopen, AS-i, etc.)

Accommodates gateway type serial wiring

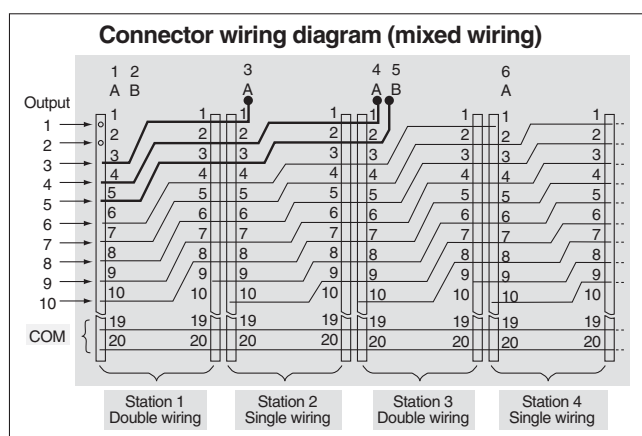
- Because just one gateway unit controls up to 4 branch lines, it offers much more freedom in choosing valve mounting locations in comparison to other serial units.
- A single cable from the gateway provides both signal and power to each branch, thus eliminating the need for separate power connections for each manifold valve and input block.
- The use of a multi-connector for input blocks makes manifold station expansion or reduction a breeze.

A wide variety of prepackaged wiring configurations



- Our six standard wiring packages bring a world of ease to wiring and maintenance work, while the protective enclosures of four of them conform to IP67 standards.
- The S Kit is compatible with a combined I/O unit. (If used with Gateway unit, SI must be output only.)

Conforming to IP67 for protection from dust and moisture
(Based on IEC529)
(For kits S, T, L and M)



(Refer to the connector wiring diagram.)

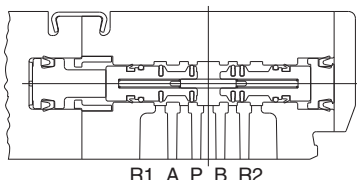
Printed circuit board patterns between connectors are shifted at every station. This allows for viable connections to take place without necessarily specifying whether the manifold station is double, single, or mixed wiring.

Dual 3 port valves, 4 positions

VQC1000/2000 (Rubber seal type only)

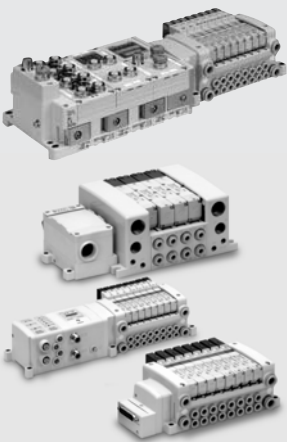
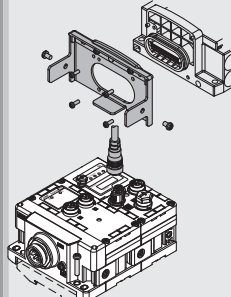
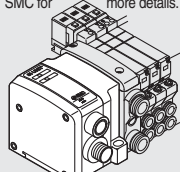












- Two 3 port valves built into one body.
- The 3 port valves on the A and B sides can operate independently.
- When used as 3 port valves, only half the number of stations is required.
- Can also be used as a 4 position, 5 port type valve.

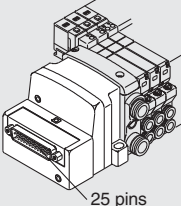
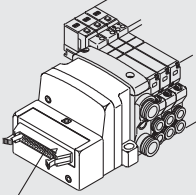
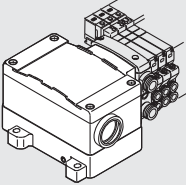
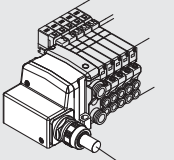
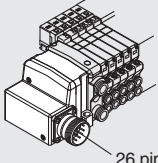















Exhaust center : **VQC1A01**
VQC2A01
Pressure center : **VQC1B01**
VQC2B01



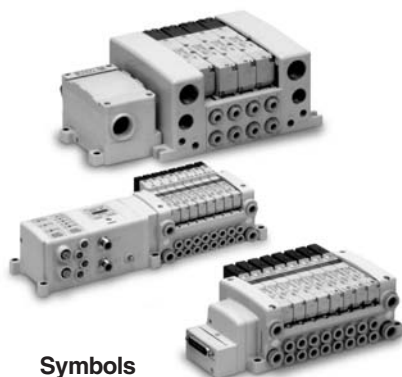
Model	A side	B side	JIS Symbol
VQC1A01 VQC2A01	N.C. valve	N.C. valve	
VQC1B01 VQC2B01	N.O. valve	N.O. valve	
VQC1C01 VQC2C01	N.C. valve	N.O. valve	

Base Mounted: Variations

			Sonic Conductance C[dm³/(s·bar)] (Values of CYL to EXH (From 4 to 5 and from 2 to 3))		Applicable bore size	S Kit			
						Serial transmission			
						Single/Double	3 position (Closed center)	Compatible network • DeviceNet • PROFIBUS-DP • CC-Link  Serial unit: EX600 Conforms to IP67	Gateway application Compatible network • Remote I/O • DeviceNet • PROFIBUS-DP • CC-LINK • Ethernet/IP Decentralized Serial Wiring Gateway application requires a gateway unit and communication cable separately. Please contact SMC for more details.  Serial unit: EX500 IP67 compliant
Series VQC1000	Metal seal	VQC1□00	0.72	0.72	to ø50				
	Rubber seal	VQC1□01	1.0	0.65					
Series VQC2000	Metal seal	VQC2□00	2.6	2.0	to ø80				
	Rubber seal	VQC2□01	3.2	2.2					
Series VQC4000	Metal seal	VQC4□00	6.9	6.3	to ø140				
	Rubber seal	VQC4□01	7.3	6.4					

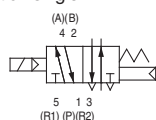
	F Kit	P Kit	T Kit	L Kit	M Kit	Port size	
	D-sub connector	Flat ribbon cable	Terminal block box	Electrical entry	Multiple connector	SUP EXH port	Cylinder port
	D-sub connector (Compatible with D-sub connector that complies with MIL standard.)  25 pins	Flat ribbon cable (Compatible with flat ribbon cable connector that complies with MIL standard.)  26 pins 20 pins	Terminal block box (Terminal blocks) Terminals are concentrated in compact clusters within the terminal block box.  IP67 compliant	Lead wire (IP67 enclosure with use of multiple wire cable with sheath and waterproof connector)  25 core cable IP67 compliant	Multiple connector (IP67 enclosure with use of waterproof multiple connector)  26 pins IP67 compliant		
						C8 (for ø8) N9 (ø5/16")	C3 (For ø3.2) C4 (For ø4) C6 (For ø6) M5 (M5 thread) N1 (ø1/8") N3 (ø5/32") N7 (ø1/4")
						C10 (for ø10) N11 (ø3/8") In case of branch type C12 (for ø12) N13 (ø1/2")	C4 (For ø4) C6 (For ø6) C8 (For ø8) N3 (ø5/32") N7 (ø1/4") N9 (ø5/16")
						<SUP port> Rc 1/2 (NPT, NPTF, G) <EXH port> Rc 3/4 (NPT, NPTF, G)	C8 (For ø8) C10 (For ø10) C12 (For ø12) N7 (ø1/4") N9 (ø5/16") N11 (ø3/8") Rc 1/4 Rc 3/8 Rc 1/4 (Bottom ported) (NPT, NPTF, G)

Models

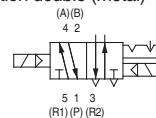


Symbols

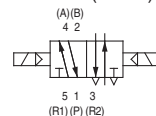
2-position single



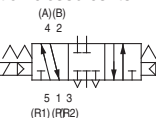
2-position double (metal)



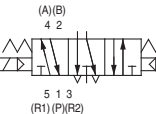
2-position double (rubber)



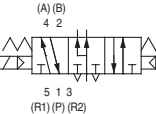
3-position closed center



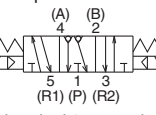
3-position exhaust center



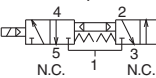
3-position pressure center



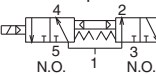
3-position perfect



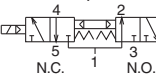
4-position dual 3-port valve (A)



4-position dual 3-port valve (B)



4-position dual 3-port valve (C)



Series	No. of solenoids		Model		Flow characteristics						Response time ^{Note 2)} ms		Weight g (lbs)	
					1→4, 2 (P→A, B)			4, 2→5, 3 (A, B→R1, R2)			Standard: 1W	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 (0.14)	
			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 (0.17)	
			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	VQC1A01C	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 (0.20)	
			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 (0.24)	
			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	VQC2A01C	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 (0.51)	
			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 (0.57)	
			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 (0.62)	
			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 (1.10)
			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 JISB8375-1981 (operating with clean air and a supply pressure of 0.5MPa. Equipped with light and 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		0.7MPa (High pressure type: 1.0MPa) ^{Note 4)}	
		Min. operating pressure (psi)	Single	0.1MPa (14.5)	0.15MPa (21.8)
			Double	0.1MPa (14.5)	
			3-position	0.1MPa (14.5)	0.2MPa (29.0)
			4-position	—	0.15MPa (21.8)
	VQC4000	Max. operating pressure ^{Note 3)}		1.0MPa (0.7MPa -- Option)	
		Min. operating pressure (psi)	Single	0.15MPa (21.8)	0.2MPa (29.0)
			Double	0.15MPa	
			3-position	0.15MPa (21.8)	0.2MPa (29.0)
	Proof pressure		1.5MPa		
	Ambient and fluid temperature		−10° to 50°C ^{Note 1)}		
	Lubrication		Not required		
Manual override		Push type/Locking type (tool required) optional			
Impact resistance/Vibration resistance		150/30 m/s ² ^{Note 2)}			
Enclosure		Dust proof (conforms to IP67)			
Electrical specifications	Rated coil voltage		24VDC		
	Allowable voltage fluctuation		±10% of rated voltage		
	Coil insulation type		Equivalent to B type		
	Power consumption (Current)	24VDC	1W DC (42mA), 0.5W DC (21mA)		

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 8.3 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 (0.5W) specification.

Note 4) Metal seal type only.

Manifold Specifications

Series	Base model	Connection type	Piping specifications			Applicable stations <div>Note 1)</div>	Applicable solenoid valves	5-station weight g (lbs)
			Port direction	Port size				
				1, 3 (P, R)	2, 4 (A, B)			
VQC1000	VV5QC11-□□□	<div>■ F Kit: D-sub connector</div> <div>■ P Kit: Flat cable</div> <div>■ T Kit: Terminal block box</div> <div>■ S Kit: Serial transmission</div> <div>■ L Kit: Lead wire</div> <div>■ M Kit: Multiple connector</div>	Side	C8 (for ø8) N9 (for ø5/16")	C3 (for ø3.2) C4 (for ø4) C6 (for ø6) M5 (M5 threads) N1 (for ø1/8") N3 (for ø5/32") N7 (for ø1/4")	<div>(F and P Kits)</div> <div>1 to 12 stations</div>	VQC1□00-5 VQC1□01-5	628 (1.38) (Single) 759 (1.67) (Double, 3P)
VQC2000	VV5QC21-□□□		Side	C10 (for ø10) N11 (for ø3/8")	C4 (for ø4) C6 (for ø6) C8 (for ø8) N3 (for ø5/32") N7 (for ø1/4") N9 (for ø5/16")	<div>(T Kit)</div> <div>1 to 10 stations</div> <div>(S Kit)</div> <div>1 to 8 stations: EX500</div> <div>1 to 12 stations: EX250</div>	VQC2□00-5 VQC2□01-5	1051 (2.32) (Single) 1144 (2.52) (Double, 3P)
VQC4000	VV5QC41-□□□		Side	P: Rc 1/2 (NPT, NPTF, G) R: Rc 3/4 (NPT, NPTF, G)	C8 (for ø8) C10 (for ø10) C12 (for ø12) N7 (for ø1/4") N9 (for ø5/16") N11 (for ø3/8") Rc 1/4, Rc 1/8 (NPT, NPTF, G)	<div>(T Kit)</div> <div>1 to 10 stations</div> <div>(S Kit)</div> <div>1 to 16 stations</div>	VQC4□00-5 VQC4□01-5	4150 (9.15) <div>• S Kit (without unit)</div> <div>• Solenoid weight is not included.</div>
			Bottom		Rc 1/4 (NPT, NPTF, G)			

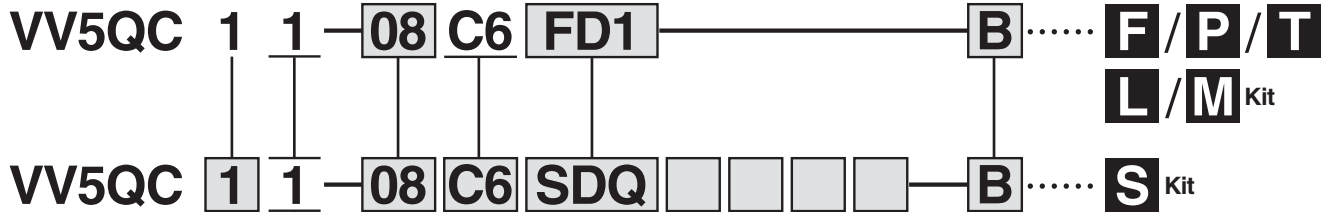
Note 1) An optional specification for special wiring is available to increase the maximum number of stations.

Series VQC1000/2000



For details about certified products conforming to international standards, visit us at www.smcworld.com.

How to Order Manifold



Series

1	VQC1000
2	VQC2000

Manifold model

1	Plug-in unit
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Stations

01	1 station
:	:

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

Cylinder port size

C3	With ø3.2 One-touch fitting
C4	With ø4 One-touch fitting
C6	With ø6 One-touch fitting
M5	M5 thread (VQC1000 only)
CM	Mixed sizes and with port plug
L3	Top ported elbow With ø3.2 One-touch fitting (VQC1000 only)
L4	Top ported elbow With ø4 One-touch fitting
L6	Top ported elbow With ø6 One-touch fitting
L5	M5 thread
L8	Top ported elbow With ø8 One-touch fitting (VQC2000 only)
B3	Bottom ported elbow With ø3.2 One-touch fitting (VQC1000 only)
B4	Bottom ported elbow With ø4 One-touch fitting
B6	Bottom ported elbow With ø6 One-touch fitting
B5	M5 thread (VQC1000 only)
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 areas follows:

<For One-touch fittings>

N1: ø1/8"

N3: ø5/32"

N7: ø1/4"

NM: Mixed

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

Kit designation/Electrical entry/Cable length

(Refer to page 9 for detailed information on kits.)

SI unit COM.

SI unit COM		EX250					EX500			
		DeviceNet	PROFIBUS-DP	CC-LINK	AS-i	CANopen	DeviceNet	PROFIBUS-DP	CC-LINK	Remote I/O
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)} (Except double wiring)
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 (VQC2000 only) ^{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 (-)

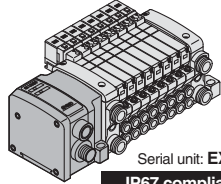
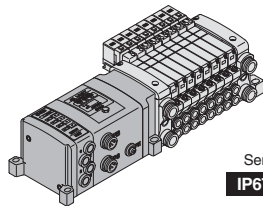
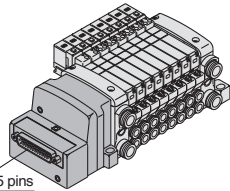
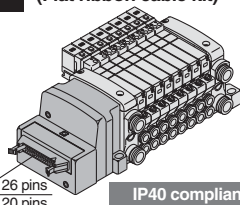
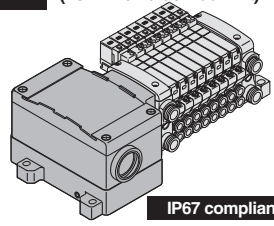
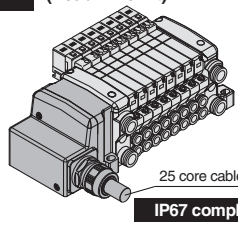
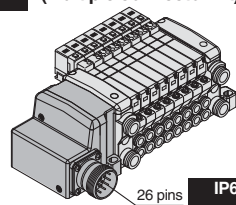
Input block type

(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)

Base-Mounted Type

Kit Designation/Electrical Entry/Cable Length

<div>S</div> <div>Kit (Decentralized wiring type serial kit)</div> <div>  <div>Serial unit: EX500 IP67 compliant</div> </div> <div>Note) A separate gateway unit and communication cable are required.</div> <div> <table> <tr> <td>SD0</td> <td>Serial kit without SI unit</td> <td rowspan="4">1 to 8 stations (16 stations)</td> </tr> <tr> <td>SDA1</td> <td>Serial kit for Remote I/O</td> </tr> <tr> <td>SDA2</td> <td>Serial kit for DeviceNet/ PROFIBUS-DP/CC-LINK/ Ethernet/IP</td> </tr> <tr> <td></td> <td></td> </tr> </table> </div>	SD0	Serial kit without SI unit	1 to 8 stations (16 stations)	SDA1	Serial kit for Remote I/O	SDA2	Serial kit for DeviceNet/ PROFIBUS-DP/CC-LINK/ Ethernet/IP			<div>S</div> <div>Kit (I/O serial kit)</div> <div>  <div>Serial unit: EX250 IP67 compliant</div> </div> <div> <table> <tr> <td>SD0</td> <td>Serial kit without SI unit</td> <td rowspan="10">1 to 12 stations (24 stations)</td> </tr> <tr> <td>SDY</td> <td>Serial kit for CANopen</td> </tr> <tr> <td>SDQ</td> <td>Serial kit for DeviceNet</td> </tr> <tr> <td>SDN</td> <td>Serial kit for PROFIBUS-DP</td> </tr> <tr> <td>SDTA</td> <td>AS-i, 8 in/out, 31 slave modes, 2 power supply systems</td> </tr> <tr> <td>SDTB</td> <td>AS-i, 4 in/out, 31 slave modes, 2 power supply systems</td> </tr> <tr> <td>SDTC</td> <td>AS-i, 8 in/out, 31 slave modes, 1 power supply systems</td> </tr> <tr> <td>SDTD</td> <td>AS-i, 4 in/out, 31 slave modes, 1 power supply systems</td> </tr> <tr> <td>SDZCN</td> <td>Serial kit for controlNet (IP 40)</td> </tr> <tr> <td>SDY</td> <td>Serial Kit for CAN open</td> </tr> <tr> <td>SDZEN</td> <td>Serial kit for Ethernet/IP</td> <td>1 to 12 stations (24 stations)</td> </tr> </table> </div>	SD0	Serial kit without SI unit	1 to 12 stations (24 stations)	SDY	Serial kit for CANopen	SDQ	Serial kit for DeviceNet	SDN	Serial kit for PROFIBUS-DP	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	SDZCN	Serial kit for controlNet (IP 40)	SDY	Serial Kit for CAN open	SDZEN	Serial kit for Ethernet/IP	1 to 12 stations (24 stations)	<div>F</div> <div>Kit (D-sub connector kit)</div> <div>  <div>25 pins IP40 compliant</div> </div> <div> <table> <tr> <td>FD0</td> <td>D-sub connector kit (25P) without cable</td> <td rowspan="4">1 to 12 stations (24 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> </div>	FD0	D-sub connector kit (25P) without cable	1 to 12 stations (24 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
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<div>P</div> <div>Kit (Flat ribbon cable kit)</div> <div>  <div>26 pins 20 pins IP40 compliant</div> </div> <div>Note) For a 20P flat ribbon cable, the cable assembly must be ordered separately.</div> <div> <table> <tr> <td>PD0</td> <td>Flat ribbon cable kit (26P) without cable</td> <td rowspan="3">1 to 12 stations (24 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> <td></td> </tr> <tr> <td>PDC</td> <td>Flat ribbon cable kit (20P) without cable</td> <td>1 to 9 stations (18 stations)</td> </tr> </table> </div>	PD0	Flat ribbon cable kit (26P) without cable	1 to 12 stations (24 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	1 to 9 stations (18 stations)	<div>T</div> <div>Kit (Terminal block box kit)</div> <div>  <div>IP67 compliant</div> </div> <div> <table> <tr> <td>TD0</td> <td>Terminal block box kit</td> <td>1 to 10 stations (20 stations)</td> </tr> </table> </div>	TD0	Terminal block box kit	1 to 10 stations (20 stations)	<div>L</div> <div>Kit (Lead wire kit)</div> <div>  <div>25 core cable IP67 compliant</div> </div> <div> <table> <tr> <td>LD0</td> <td>Lead wire kit (25 core) 0.6 m lead wire</td> <td rowspan="3">1 to 12 stations (24 stations)</td> </tr> <tr> <td>LD1</td> <td>Lead wire kit (25 core) 1.5 m lead wire</td> </tr> <tr> <td>LD2</td> <td>Lead wire kit (25 core) 3.0 m lead wire</td> </tr> </table> </div>	LD0	Lead wire kit (25 core) 0.6 m lead wire	1 to 12 stations (24 stations)	LD1	Lead wire kit (25 core) 1.5 m lead wire	LD2	Lead wire kit (25 core) 3.0 m lead wire	<div>M</div> <div>Kit (Multiple connector kit)</div> <div>  <div>26 pins IP67 compliant</div> </div> <div> <table> <tr> <td>MD0</td> <td>Multiple connector kit (26P) without cable</td> <td rowspan="4">1 to 12 stations (24 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> </div>	MD0	Multiple connector kit (26P) without cable	1 to 12 stations (24 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									
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How to order Manifold with EX600 SI unit

VV5QC 1 1 - 08 C6 SD6Q 2 N 1 -

Series

1	VQC 1000
2	VQC 2000

Base piping plug-in

Stations

Symbol	Stations
01	1 stn.
⋮	⋮
24 ^{Note)}	24 stn.

Note) The maximum number of stations depends on the wiring specifications.

Cylinder ports

C3	With one-touch fitting for ø3.2
C4	With one-touch fitting for ø4
C6	With one-touch fitting for ø6
M5	M5 thread (only VQC 1000)
CM	Combination with port plug
L3	Top ported elbow with ø3.2 one-touch fitting (only VQC 1000)
L4	Top ported elbow with ø4 one-touch fitting
L6	Top ported elbow with ø6 one-touch fitting
L5	M5 thread (only VQC 1000)
B3	Bottom ported elbow with ø3.2 one-touch fitting
B4	Bottom ported elbow with ø4 one-touch fitting
B6	Bottom ported elbow with ø6 one-touch fitting
B5	M5 thread (only VQC 1000)
B8	Bottom ported elbow with ø8 one-touch fitting (only VQC 2000)
LM	Mixed port of elbow piping

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

Note 2) Symbol of inch size are as follows:

- N1: ø1/8"
- N3: ø5/32"
- N7: ø1/4"
- N9: ø5/16" (only VQC2000)
- NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.
For NM, specify with the manifold specification sheet.

S Kit - EX600

Kit type	Symbol	Specifications	Stations	Max. number of stations for special wiring specification	Max. number of solenoids
S kit	SD60	No SI unit	1 to 12 stn	24 stn.	24
	SD6Q	For DeviceNet™			
	SD6N	For PROFIBUS DP			
	SD6V	For CC-Link			

Note) Max. station number depends on the number of solenoid valve.

- Add option symbol "K" when the combination of single wiring and double wiring is specified.
- I/O unit can not be mounted without SI unit.
- When "No SI unit" is specified, the valve plate to connect the manifold and SI unit is not mounted.

Option

Nil	No option
B ^{Note 2)}	With back pressure check valve (All stn.)
D	With DIN rail (Standard rail length)
D0	DIN rail mounting style (without DIN rail)
D□ ^{Note 3)}	With DIN rail Length specified (M: stations)
K ^{Note 4)}	Special wiring Specification (Except double wiring)
N ^{Note 5)}	Name plate
R ^{Note 6)}	External pilot
S	Built-in Silencer, Direct exhaust
T ^{Note 7)}	U side P, R port on both sides (only VQC 2000)

Note 1) When two or more symbols are specified, indicate them alphabetically. EX.) "_BRS"

Note 2) When back pressure check valve is used only for specified station, specify back pressure check valve part number, and specify station number to which the valve is mounted with the manifold specification sheet.

Note 3) Specified station number shall be longer than manifold station number.

Note 4) When single wiring and double wiring are mixed, specify wiring type of each station with the manifold specification sheet.

Note 5) When external pilot type is used, specify the valve for external pilot type.

Note 6) Silencer built-in type dose not satisfy IP67.

Note 7) SUP and EXPA port on both sides of U side (on cylinder port side and coil side.)

Note 7) When change specification from no DIN rail type to DIN rail mounting type, consult SMC.

Note 8) When "no SI unit" is specified, DIN rail type (D) can not be selected.

I/O unit stn. number

Nil	None
1	1 stn.
⋮	⋮
9	9 stn.

Note 1) Without SI unit, the symbol is nil.

Note 2) SI unit is no included in stn. number.

Note 3) When I/O unit is selected, it is shipped separated, and customer assemble it.

SI unit COM.

Nil	+ COM.
N	- COM.

Note) Without SI unit, the symbol is nil.

End plate type

Nil	No end plate
2	Power supply M12 connector (Max. supply current 2A)
3	Power supply 7/8" connector (Max. supply current 8A)

Note) Without SI unit, the symbol is nil.

How to Order Manifold

VV5QC 4 1 - 08 02 TD0

VV5QC 4 1 - 16 03 SDQW

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:
<For One-touch fittings>
N7: ø1/4"
N9: ø5/16"
N11: ø3/8"
NM: Mixed

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	+	+	+	+	+	+	+	+	+	+	+	+
N	-	-	-	-	-	-	-	-	-	-	-	-

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

F / L / M
P / T Kit

S Kit

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.

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 transmission kit)

Serial unit: EX500
Conforms to IP67

Note) A separate gateway unit and communication cable are required.

SD0	Serial kit without SI unit	1 to 8 stations (16 stations)
SDA1	Serial kit for Remote I/O	
SDA2	Serial kit for DeviceNet PROFIBUS-DP/CC-Link/Ethernet/IP	

S Kit
(I/O serial transmission kit)

Serial unit: EX250
Conforms to IP67

SD0	Serial kit without SI unit	1 to 12 stations (24 stations)
SDQ	Serial kit for DeviceNet	
SDN	Serial kit for PROFIBUS-DP	
SDV	Serial kit for CC-link	
SDTA	Serial kit for As-i 8In/8Out 31 slave mode - 2 isolated common type	
SDTB	Serial kit for As-i 4In/4Out 31 slave mode - 2 isolated common type	
SDTC	Serial kit for As-i 8In/8Out 31 slave mode - 1 isolated common type	
SDTD	Serial kit for As-i 4In/4Out 31 slave mode - 1 isolated common type	
SDZCN	Serial kit for ControlNet (IP40)	
SDY	Serial kit for CANopen	
SDZEN	Serial kit for Ethernet/IP	1 to 12 stations (24 stations)

S Kit
(I/O serial transmission kit)

Serial unit: EX240
Conforms to IP67

SD0	Serial kit without SI unit	1 to 16 stations
SDQW	Serial kit for DeviceNet	
SDNW	Serial kit for PROFIBUS-DP	

How to order Manifold with EX600 SI unit

VV5QC 4 1 - 16 02 SD6Q 2 N 1 -

VQC4000 Series

Base piping plug-in

Stations

Symbol	Stations
01	1 stn.
⋮	⋮
16 ^{Note)}	16 stn.

Note) The maximum number of stations depends on the wiring specifications.

Cylinder ports

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

Thread type

Nil	Rc
F	G
T	NPT/NPTF

S-Kit - EX600

Kit type	Symbol	Specifications	Stations	Max. number of stations for special wiring specification	Max. number of solenoids
S kit	SD60	No SI unit	1 to 12 stn.	16 stn.	24
	SD6Q	For DeviceNet™			
	SD6N	For PROFIBUS DP			
	SD6V	For CC-Link			

Note) Max. station number depends on the number of solenoid valve.

Add option symbol "-K" when the combination of single wiring and double wiring is specified

• I/O unit can not be mounted without SI unit.

• When "No SI unit" is specified, the valve plate to connect the manifold and SI unit is not mounted.

Option

Nil	No option
K ^{Note)}	Special wiring specifications (Not double wiring)

Note) When single wiring and double wiring are mixed, specify wiring type of each station with the manifold specification sheet.

I/O unit stn. number

Nil	None
1	1 stn.
⋮	⋮
9	9 stn.

Note1) Without SI unit, the symbol is nil.

Note2) SI unit is not included in stn. number.

SI unit COM.

Nil	+ COM.
N	- COM.

Note 1) Without SI unit, the symbol is nil.

Note 2) When I/O unit is selected it is shipped separately, and customer assemble it.

End plate type

Nil	No end plate
2	
3	Power supply 7/8" connector (Max. supply current 8A)

Note) Without SI unit, the symbol is nil.

How to order Solenoid Valve

VQC 1 1 0 0 - 5

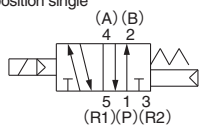
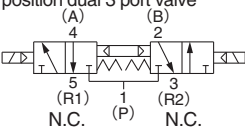
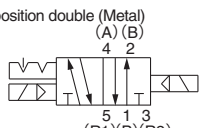
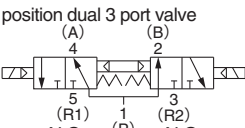
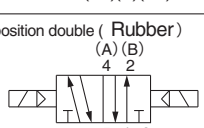
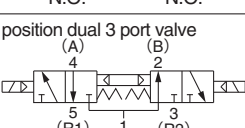
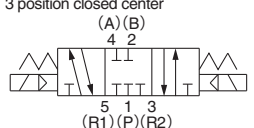
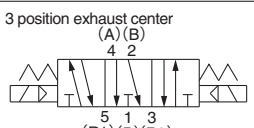
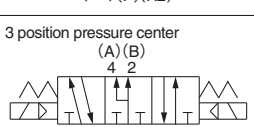
Series

1	VQC 1000
2	VQC 2000

Rated coil voltage

5	24VDC
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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) (B) 4 2 5 1 3 (R1) (P) (R2) N.C. N.C.
2	2 position double (Metal)  (A) (B) 4 2 5 1 3 (R1) (P) (R2)	B Note)	4 position dual 3 port valve  (A) (B) 4 2 5 1 3 (R1) (P) (R2) N.O. N.O.
	2 position double (Rubber)  (A) (B) 4 2 5 1 3 (R1) (P) (R2)	C Note)	4 position dual 3 port valve  (A) (B) 4 2 5 1 3 (R1) (P) (R2) N.C. N.O.
3	3 position closed center  (A) (B) 4 2 5 1 3 (R1) (P) (R2)	Note) Rubber seal type only	
4	3 position exhaust center  (A) (B) 4 2 5 1 3 (R1) (P) (R2)		
5	3 position pressure center  (A) (B) 4 2 5 1 3 (R1) (P) (R2)		

Function

Nil	Standard type (0.4 W)
B	High pressure type (0.95W)
K ^{Note 2)}	High pressure type (1.0MPa)
N	Negative common
R ^{Note 3)}	External pilot

Note1) When two or more symbols are specified, indicate them alphabetically.
Note2) Metal seal type only.
Note3) Dual 3 port type is not applicable.

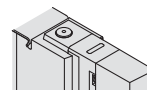
Seal

0	Metal seal
1	Rubber seal

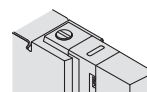
Manual override

VQC 2000

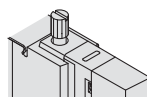
Nil: Non-locking push type
(Tool required)



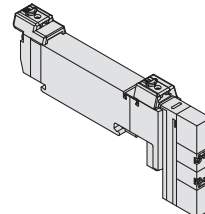
B: Locking type
(Tool required)



C: Locking type
(Manual)

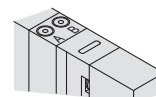


D: Slide locking type
(Manual)

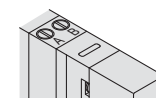


VQC 1000

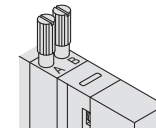
Nil: Non-locking push type
(Tool required)



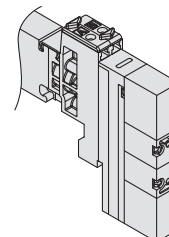
B: Locking type
(Tool required)



C: Locking type
(Manual)

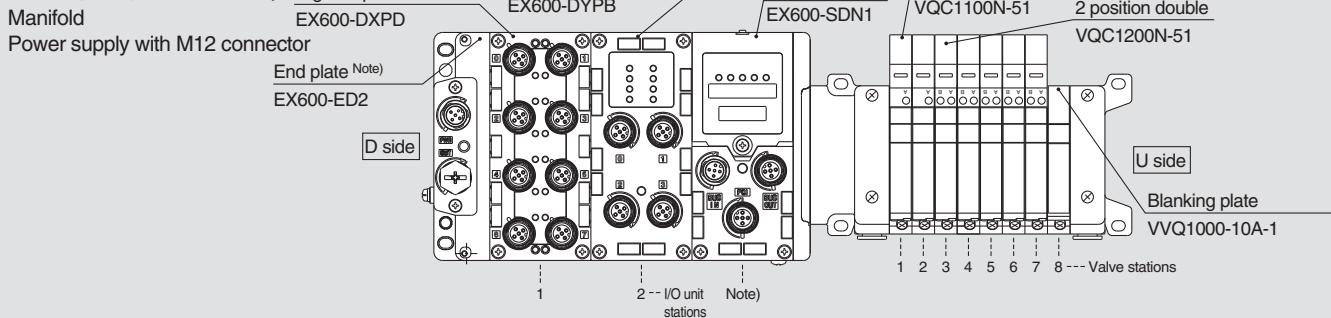


D: Slide locking type
(Manual)



How to Order Valve Manifold Assembly (Example)

Example (VV5QC11)



Serial transmission kit

- * VV5QC11-08C6SD6Q2N2 1set Manifold base part number
- * VQC1100N-51 2set Valve part number (Stations 1 to 2)
- * VQC1200N-51 5set Valve part number (Stations 3 to 7)
- * VVQ1000-10A-1 1set Blanking plate number (Station 8)
- * EX600-DXPD 1set I/O unit part number (Station 1)
- * EX600-DYPB 1set I/O unit part number (Station 2)

→ The asterisk shows an assembly position.
Prefix the asterisk to the part number of the solenoid valve, etc.

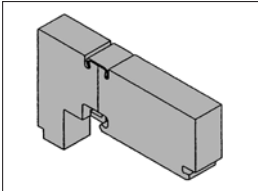
Enter in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

Enter in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

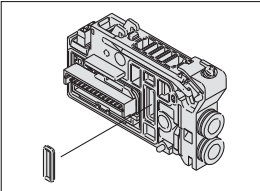
Note) Do not enter the SI unit part number and end plate part number together.

Manifold Options

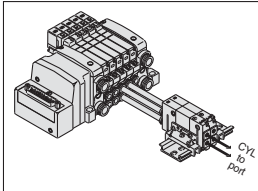
Blanking plate assembly
VVQ1000-10A-1
VVQ2000-10A-1



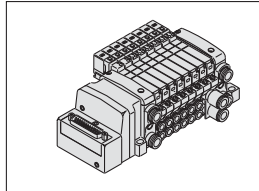
SUP block plate
VVQ1000-16A
VVQ2000-16A



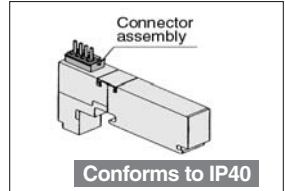
Perfect block
VVQ1000-FPG-□
VVQ2000-FPG-□



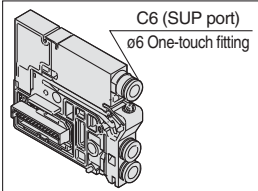
Dual flow fitting assembly
VVQ1000-52A-C8
VVQ2000-52A-C10



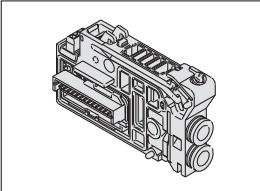
Blanking plate with connector
VVQ1000-1C□□
(VQC1000 only)



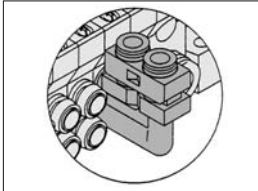
Individual SUP spacer
VVQ1000-P-1-C6
VVQ2000-P-1-C8



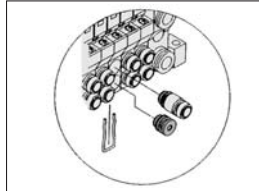
EXH block plate assembly
VVQ1000-19A-□
VVQ2000-19A-□



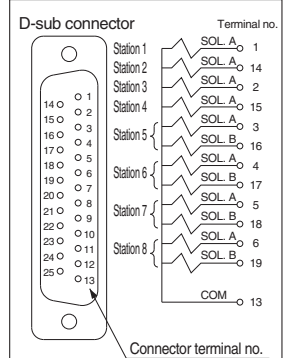
Elbow fitting assembly
VVQ1000-F-L□
VVQ2000-F-L□



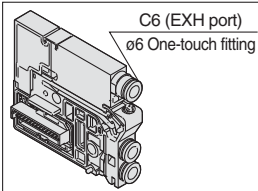
Port plug
VVQ0000-58A (For VQC1000)
VVQ1000-58A (For VQC2000)



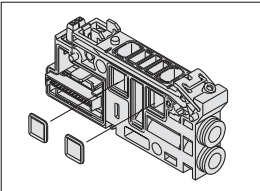
Electrical wiring specifications [-K]



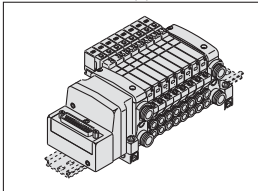
Individual EXH spacer
VVQ1000-R-1-C6
VVQ2000-R-1-C8



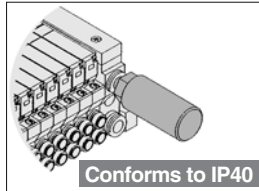
EXH block plate
VVQ2000-19A



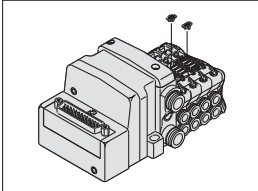
DIN rail mounting bracket [-D]
VVQ1000-57A (-S)
VVQ2000-57A (-S)



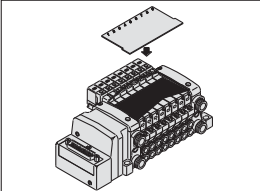
Silencer (EXH port)
AN200-KM8 (For VQC1000)
AN200-KM10 (For VQC2000)



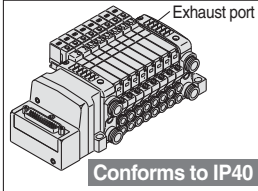
Back pressure check valve Assembly [-B]
VVQ1000-18A, VVQ2000-18A



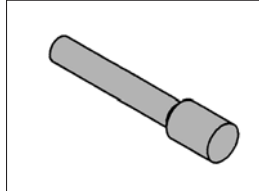
Name plate [-N]
VVQ1000-N-Stations (1 to max. no. of stations)
VVQ2000-N-Stations (1 to max. no. of stations)



Direct EXH outlet with built-in silencer [-S]



Blanking plug
KQ2P-□



How to Order Valves

VQC 4 1 0 0 5

Series
4 VQC4000

Type of actuation

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

Light/Surge voltage suppressor

Nil	With
E	Without light, with surge voltage suppressor

Coil voltage

5	24 VDC (Note)
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)

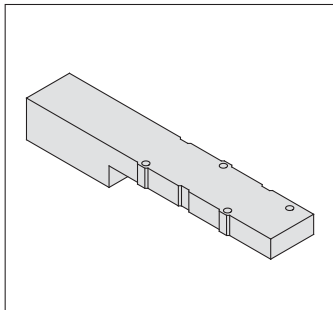
B: Locking type (Slotted)

Kit Designation/Electrical Entry/Cable Length

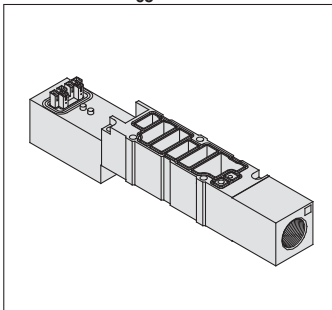
<p>F Kit (D-sub connector kit)</p> <p>IP40 compliant</p> <table border="1"> <tr> <td>FD0</td> <td>D-sub connector kit (25P) without cable</td> <td rowspan="4">1 to 12 stations (16 stations)</td> </tr> <tr> <td>FD1</td> <td>D-sub connector kit (25P) with 1.5 m cable</td> </tr> <tr> <td>FD2</td> <td>D-sub 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	<p>M Kit (Multiple connector kit)</p> <p>IP67 compliant</p> <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	<p>T Kit (Terminal block box kit)</p> <p>IP67 compliant</p> <table border="1"> <tr> <td>TD0</td> <td>Terminal block box kit</td> <td>1 to 10 stations (16 stations)</td> </tr> </table>	TD0	Terminal block box kit	1 to 10 stations (16 stations)
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																						
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																						
TD0	Terminal block box kit	1 to 10 stations (16 stations)																					
<p>L Kit (Lead wire kit)</p> <p>IP67 compliant</p> <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	<p>P Kit (Flat ribbon cable kit)</p> <p>IP40 compliant</p> <p>Note) For a 20P flat ribbon cable, the cable assembly must be ordered separately.</p> <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>PD0</td> <td>Flat ribbon cable kit (20P) without cable (Note)</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	PD0	Flat ribbon cable kit (20P) without cable (Note)	1 to 9 stations (16 stations)	<p>Note) P kit: when using the flat ribbon cable kit (20P), order cable assemblies separately.</p>		
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																						
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																						
PD0	Flat ribbon cable kit (20P) without cable (Note)	1 to 9 stations (16 stations)																					

Manifold Option

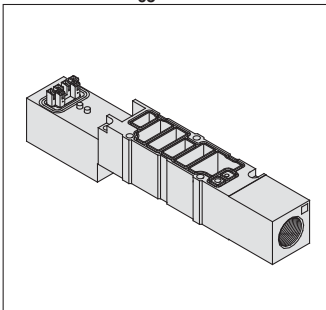
Blanking plate assembly
VVQ4000-10A-1



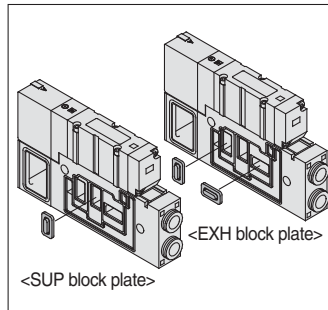
Individual SUP spacer
VVQ4000-P-1-⁰²/₀₃



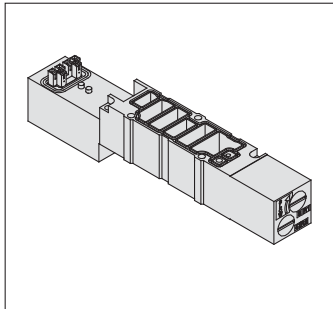
Individual EXH spacer
VVQ4000-R-1-⁰²/₀₃



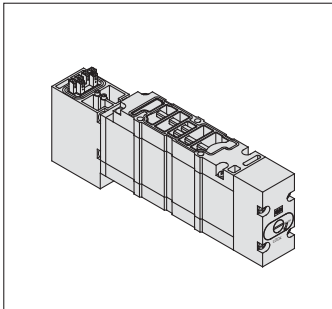
SUP/EXH block plate
VVQ4000-16A



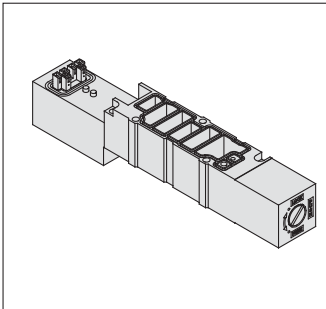
Throttle valve spacer
VVQ4000-20A-1



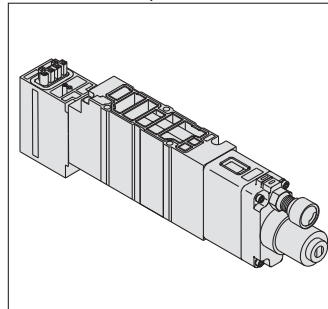
Residual pressure release valve
perfect spacer
VVQ4000-25A-1 ^{Note 1)}



SUP stop valve spacer
VVQ4000-37A-1



Interface regulator
ARBQ4000-00-^A/_P-1



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

How to Order



SI Unit



EX600-SDN□

EX600-SMJ□

EX600-SPR□

EX600 – S **DN** **1**

SI Unit

Protocol

DN	DeviceNet™
MJ	CC-Link
PR	PROFIBUS DP

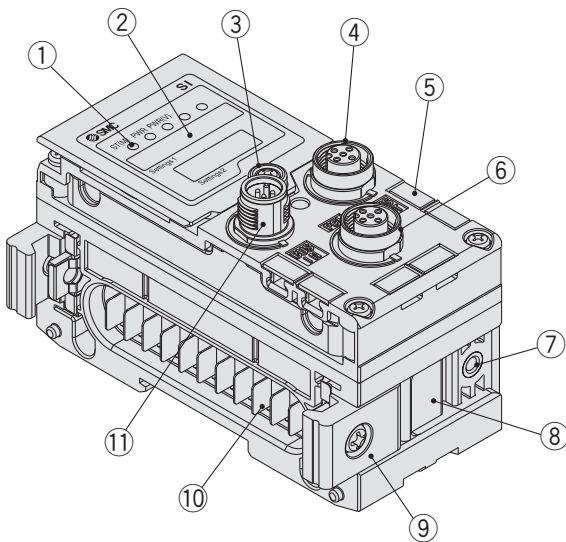
Output polarity

1	PNP (–COM.)
2	NPN(+COM.)

Specification

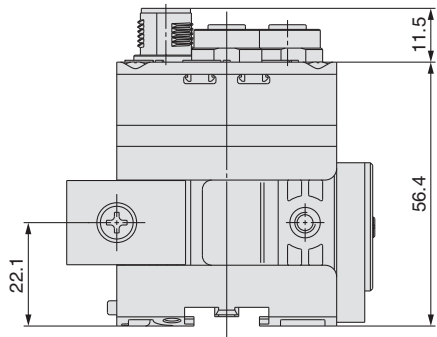
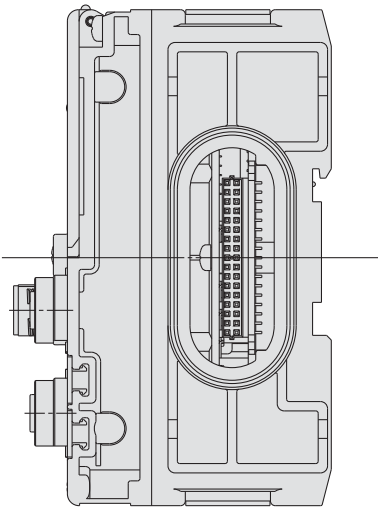
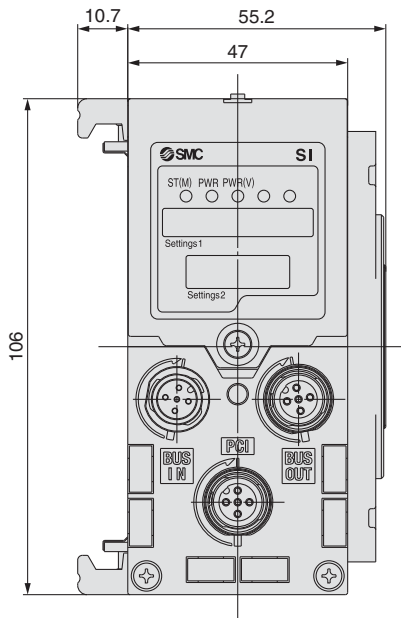
Model		EX600-SDN1		EX600-SDN2		EX600-SMJ1		EX600-SMJ2		EX600-SPR1		EX600-SPR2	
Communication	Fieldbus	DeviceNet™ Volume1 (Edition2.1) Volume 3 (Edition1.1)				CC-Link (Ver.1.10, Ver.2.00)				PROFIBUS DP (DP-V0)			
	Device type	Group2 Only Server				Remote Device Station				DP Slave			
	Communication speed	125/250/500kbps				156/625kbps 2.5/5/10Mbps				9.6/19.2/45.45/93.75/ 187.5/500kbps 1.5/3/6/12Mbps			
	Configuration file	EDS file				—				GSD file			
	I/O occupation area (Inputs/Outputs)	Max (512 points/512 points)				Max (512 points/512 points)				Max (512 points/512 points)			
	Terminal Resistance	—								Internally implemented			
Communication power supply for DeviceNet™		DC11V to 25V				—							
Internal current consumption (Power supply for control and input)		Less than 55mA				Less than 75mA				Less than 80mA			
Valve Output	Output method	PNP		NPN		PNP		NPN		PNP		NPN	
	Output channel	32 channels (8/16/24/32/channels selectable)											
	Connected load	Solenoid valve with lamp and circuit of protection of surge voltage of DC24V 1.5W SMC)											
	Output for comm. error	HOLD/CLEAR											
Protective function		Short-circuit protection											
Environmental	Enclosure	IP67 (manifold assembly)											
	Operating temp. range	-10 to 50°C											
	Operating humidity range	35 to 85% RH (no dew condensation)											
	Withstand voltage	AC500V, 1min. between external terminals and FE											
	Insulation resistance	DC500V, 10MΩ or more between external terminals and FE											
	Vibration resistance	10Hz to 57Hz with constant amplitude of 0.75mmp-p 57Hz to 150Hz with constant acceleration of 49m/s² for 2 hours in each direction of W, Y and Z direction during de-energizing)											
	Impact resistance	147m/s² 3 times in each direction of X, Y and Z (during de-energizing)											
Standard		CE marking, UL recognition (CSA)											
Weight		300g											

Parts Name



No.	Name
1	Status indication LED
2	Indication cover
3	Indication cover set screw
4	Connector (BUS OUT)
5	Marker groove
6	Connector (for Handheld Terminal)
7	Valve plate mounting hole
8	Valve plate mounting groove
9	Joint bracket
10	Connector for unit (Plug)
11	Connector (BUS IN)

Outline Dimensions



How to order



Digital Input Unit



EX600-DX□B

EX600-DX□C/C1

EX600-DX□D

EX600 – DX **N** **D**

Digital input unit

Input polarity

P	PNP
N	NPN

Connector, input points and open circuit detection

Symbol	Connector	Input channels	Open circuit detection
B	4 x M12 (5 Pin)	8 channels	No
C	8 x M8 (3 Pin)	8 channels	No
C1	8 x M8 (3 Pin)	8 channels	Yes
D	8 x M12 (5 Pin)	16 channels	No

Specifications

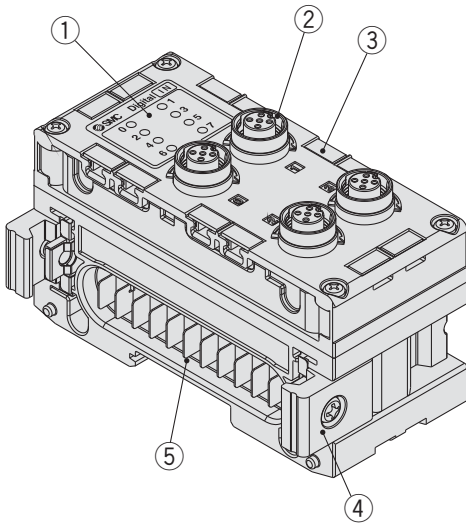
Model			EX600-DXPB	EX600-DXNB	EX600-DXPC□	EX600-DXNC□	EX600-DXPD	EX600-DXND
Input Specifications	Input type		PNP	NPN	PNP	NPN	PNP	NPN
	Input connector		M12 (5 Pin) Note1)			M8 (3 Pin)		M12 (5 Pin) ^{Noe 1)}
	Input channels		8 channels (2 channels/connector)			8 channels (1 channels/connector)		16 channels (2 channel/connector)
	Sensor supplied voltage		DC24V (Supplied from the power supply for control and inputs)					
	Maximum sensor supplid voltage		0.5A/connector 2A/unit			0.25A/connector 2A/unit		0.5A/connector 2A/unit
	Protection		Short circuit protection					
	Input resistance		2.7kΩ					
	Rated input current		9mA or less					
	ON voltage/ON voltage		17V or more/5mA or more (At NPN input, between the pin for input terminal and for sensor supplied voltage of +24 V) (At PNP input, between the pin for input terminal and for sensor supplied voltage of 0 V)					
	OFF voltage/OFF voltage		5V or less/1mA or less (At NPN input, between the pin for input terminal and for sensor supplied voltage of +24 V) (At PNP input, between the pin for input terminal and for sensor supplied voltage of 0 V)					
Open circuit detection current	^{Note 2)} 2 wires	—			0.5mA/channel ^{Note 2)}		—	
	3 wires	—			0.5mA/connector ^{Note 2)}		—	
Current consumption			50mA or less			55mA or less		70mA or less
Indicator			Green LED on (Input is ON), Red LED on (when short circuit detected at sensor's power supply, Red LED flashing (ON/OFF counter exceeded /open circuit detected Note 2))					
Environmental	Enclosure		IP67 (manifold assembly)					
	Operating temp. range		-10 to 50?					
	Operating humidity range		35 to 85% RH (no dew condensation)					
	Withstand voltage		AC500V, 1 min. between external terminals and FE					
	Insulation resistance		DC500V, 10MΩ or more between external terminals and FE					
	Vibration resistance		10Hz to 57Hz with constant amplitude of 0.75mmp-p 57Hz to 150Hz with constant acceleration 49m/s² for 2 hours in each direction of X, Y and Z (during de-energizing)					
	Impact resistance		147m/s² 3 times in each direction of X, Y and Z (during de-energizing)					
Standard			CE marking UL recognition (CSA)					
Weight			300g			275g		340g

Note 1: M12 (4 pin) connector can be connected.

Note 2: Applicable only for unit with open circuit detection function.

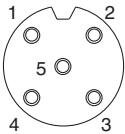
Part Names

EX600-DX□B



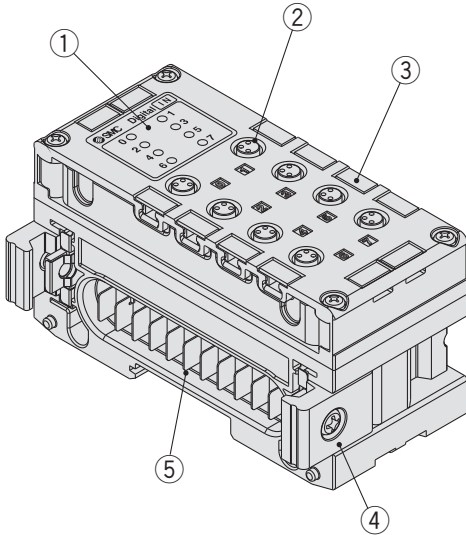
No.	Name
1	Status indication LED
2	Connector (Input)
3	Marker groove
4	Joint bracket
5	Connector for unit (plug)

Connector (Input) Pin assignment



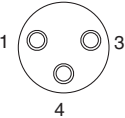
Pin No.	Signal name
1	24V (for control/input)
2	Input 2
3	0V (for control/input)
4	Input 1
5	FE

EX600-DX□C□



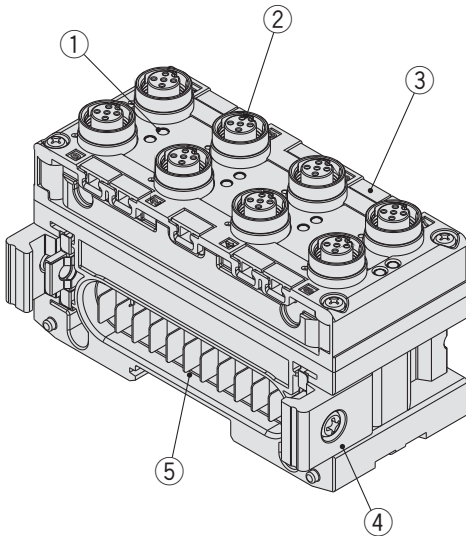
No.	Name
1	Status indication LED
2	Connector (Input)
3	Marker groove
4	Joint bracket
5	Connector for unit (plug)

Connector (Input) Pin assignment



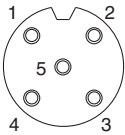
Pin No.	Signal name
1	24V(for control/input)
3	0V (for control/input)
4	Input 1

EX600-DX□D



No.	Name
1	Status indication LED
2	Connector (Input)
3	Marker groove
4	Joint bracket
5	Connector for unit (plug)

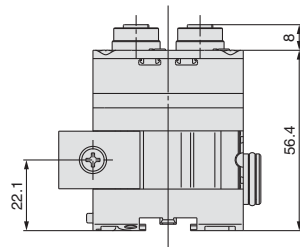
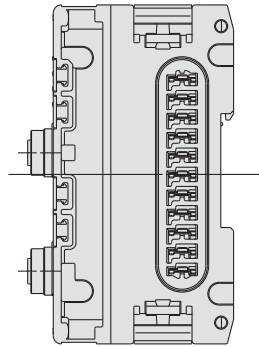
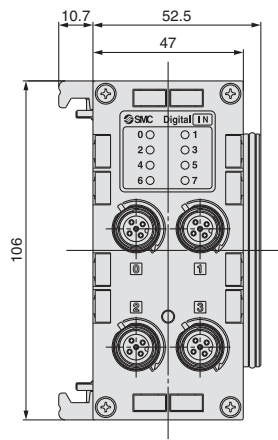
Connector (Input) Pin assignment



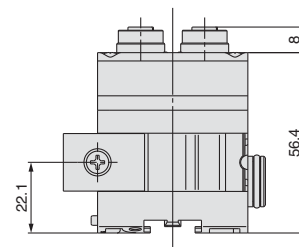
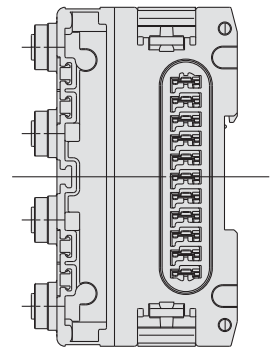
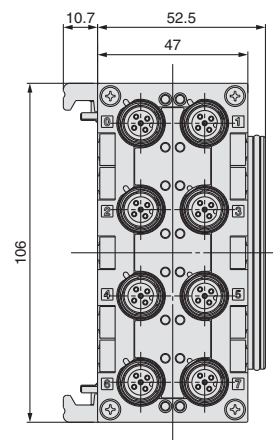
Oin No.	Signal name
1	24V(for control/input)
2	Input 2
3	0V (for control/input)
4	Input 1
5	FE

Outline Dimensions

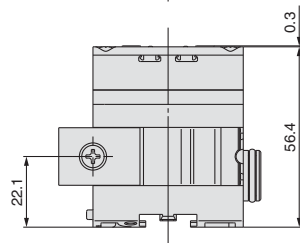
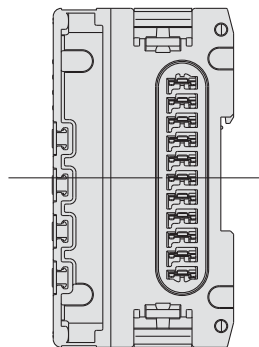
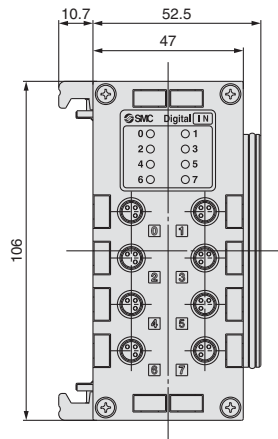
EX600-DX□B



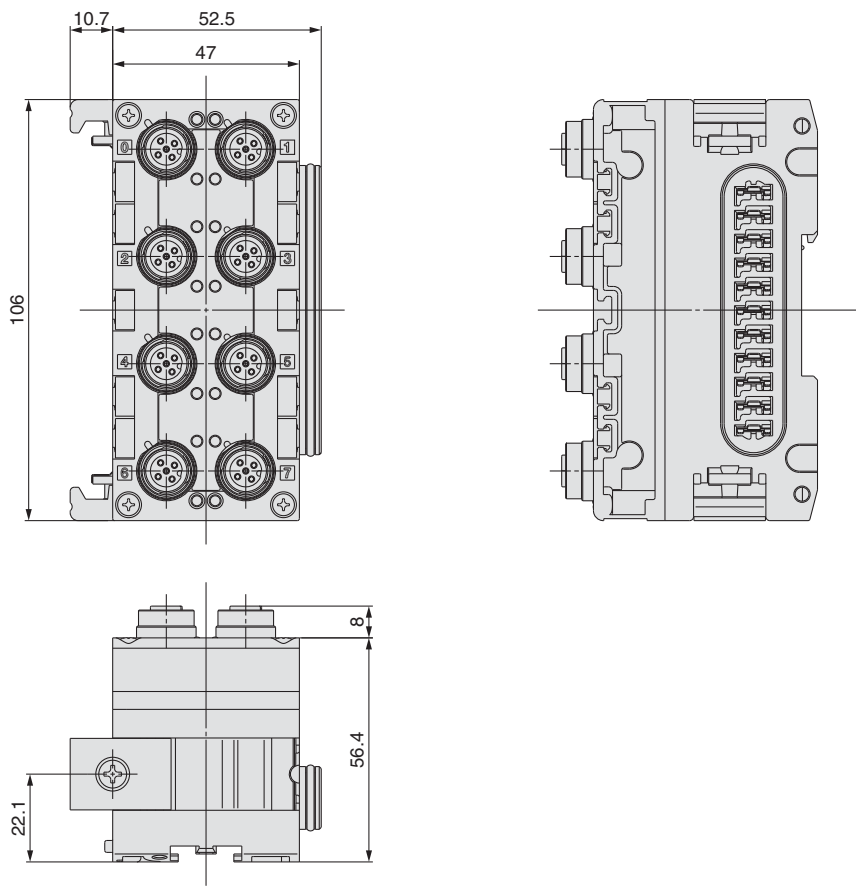
EX600-DX□D



EX600-DX□C□



EX600-DX□D



How to Order



Digital Output Unit

EX600 – DY **P** **B**

Digital output Unit

Output polarity

P	PNP
N	NPN

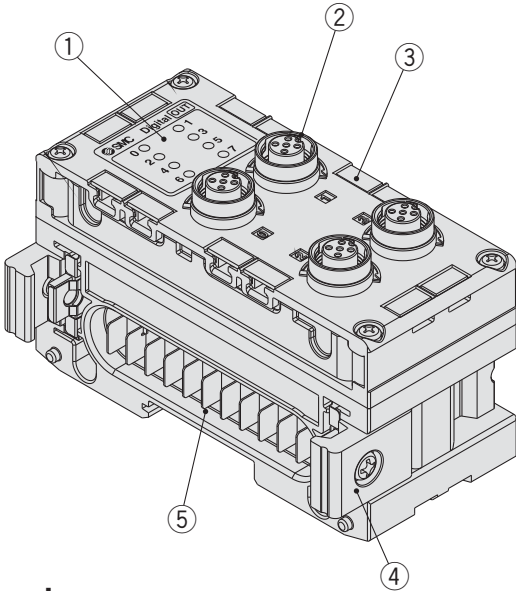
Connector and number of points

Symbol	Connector	Output channels
B	4 x M12 (5 Pin)	8 channels

Specification

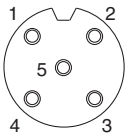
Model		EX600-DYPB	EX600-DYNB
Output specification	Output style	PNP	NPN
	Output connector	M12 (5 Pin)	
	Output points	8 channels (2 channels/connector)	
	Rated load voltage	24VDC (Supplied from Power supply for output)	
	Max. load current	0.5A/1channel 2A/unit	
	Protection	Short circuit protection	
Current consumption		50mA or less	
Display		Green LED on (during output is ON) Red LED on (short circuit at load) Red LED flashing (ON/OFF counter is exceeded, or open circuit detected)	
Environmental resistance	Enclosure	IP67(manifold assembly)	
	Operating temp. range	-10 to 50°C	
	Operating humidity range	35 to 85% RH (no dew condensation)	
	Withstand voltage	AC500V, 1min. between external terminals and FE	
	Insulation resistance	DC500V, 10MΩ or more between external terminals and FE	
	Vibration resistance	10Hz to 57Hz with constant amplitude of 0.75mm-p 57Hz to 150Hz with constant acceleration 49m/s ² for 2 hours in each direction of X, Y and Z direction (during de-energizing)	
Impact resistance		147m/s ² 3 times in each direction of X, Y and Z (during de-energizing)	
Standard		CE marking, UL recognition (CSA)	
Weight		300g	

Part Names



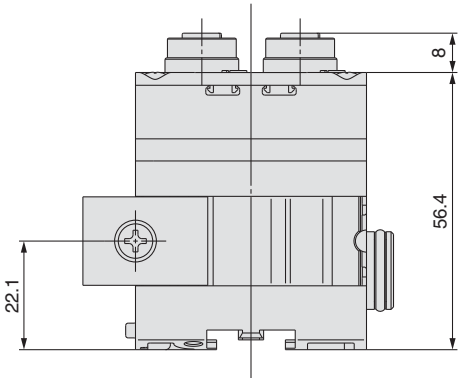
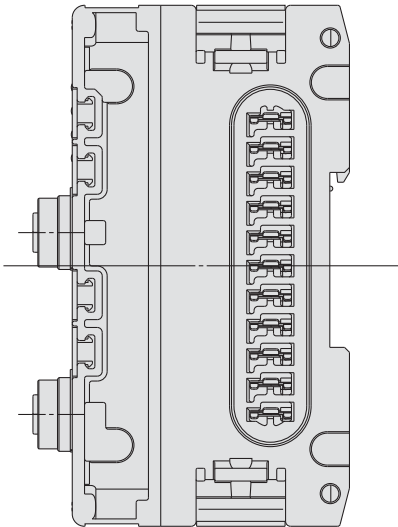
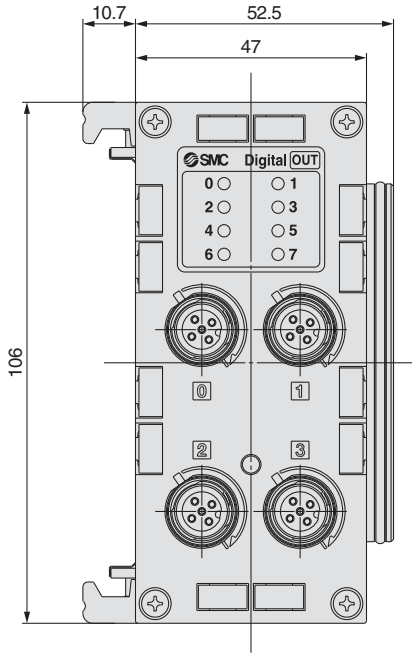
No.	Name
1	Status idication LED
2	Connector (output)
3	Marker groove
4	Joint bracket
5	Connector for unit (plug)

Connector (output) Pin Assignment



Pin No.	Sigintal name	
	EX600-DYPB	EX600-DYNB
1	NC	24V (for output)
2	Output ②	Output ②
3	0V(for output)	NC
4	Output ①	Output ①
5	FE	FE

Outline Dimensions



Analog Input Unit

How to Order



EX600 – AX A

Analog Input Unit

Connector and output channel

Symbol	Connector	Input channels
A	2 x M12 (5 Pin)	2 channel

Specifications

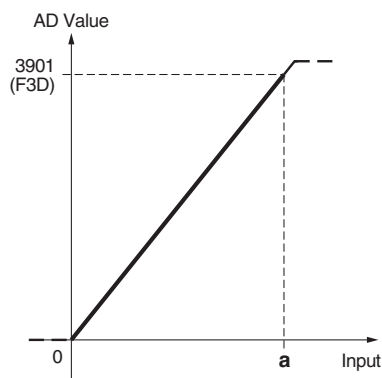
Model		EX600-AXA	
Environmental resistance	Input type	Voltage input	Current input
	Input connector	M12 (5 Pin)	
	Input channels	2 channels (1 channel/connector) <small>Note)</small>	
	Sensor supplied voltage	DC24V (Supplied from power supply for control and input)	
	Maximum sensor supplied voltage	0.5A/channel	
	Protection	Short circuit protection	
	Input signal range	12bit Resolution	0 to 10V 1 to 5V 0 to 5V
		16bit Resolution	–10V to 10V (Factory default setting) – 5V to 5V
	Max. input signal	±15V	±40mA
	Input impedance	100kΩ	50Ω
	Linearity	±0.05%F.S.	
	Repeatability	±0.15%F.S.	
	Absolute accuracy	±0.5%F.S.	±0.6%F.S.
Current consumption		70mA or less	
Display		Green LED on (hen input is ON) Red LED on (Short circuit at sensor power supply) Red LED flashing (Analog input exceeds measurement range or user setting range)	
Input Specifications	Enclosure	IP67 (Manifold assembly)	
	Operating temp. range	– 10 to 50°C	
	Operating humidity range	35 to 85% RH (No dew condensation)	
	Withstand voltage	AC500V, for 1 min. between external terminals and FE	
	Insulation resistance	DC500V, 10MΩ or more between external terminals and FE	
	Vibration resistance	10Hz to 57Hz with constant amplitude of 0.75mm-p 57Hz to 150Hz with constant acceleration of 49m/s ² for 2 hours in each direction of X, Y and Z direction (during de-energizing)	
	Impact resistance	147m/s ² 3 times in each direction of X, Y and Z (during de-energizing)	
Standard		CE Marking, UL recognition (CSA)	
Weight		290g	

Note 1) 32 channels is occupied per one unit.

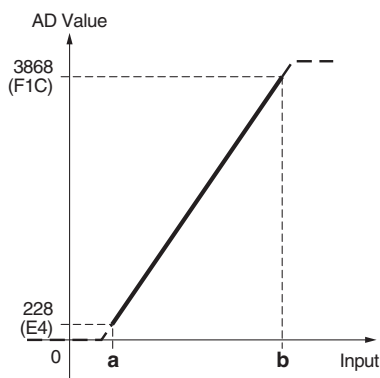
Considering influence of noise, etc. from outside source to the Analog Input Unit, when connecting a sensor that has ground connected at one end (SMC sensor uses this method), please connect sensor's ground line to unit connector's Input (–) terminal.

Analog Characteristics

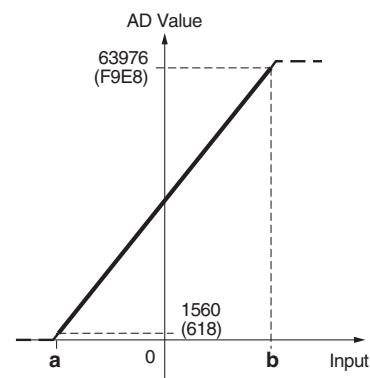
Offset Binary Data Format



Input signal range	a
0 to 10V	10V
0 to 5V	5V
0 to 20mA	20mA



Input signal range	a	b
1 to 5V	1V	5V
4 to 20mA	4mA	20mA



Input signal range	a	b
-10 to 10V	-10V	10V
-5 to 5V	-5V	5V
-20 to 20mA	-20mA	20mA

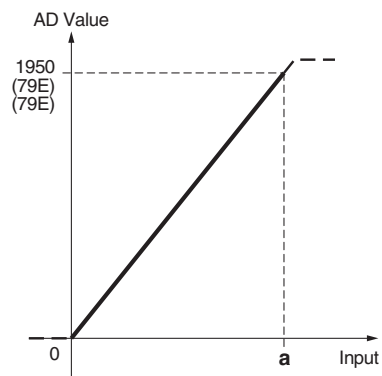
Regarding AD value

In the above graph, AD values are explained as below.

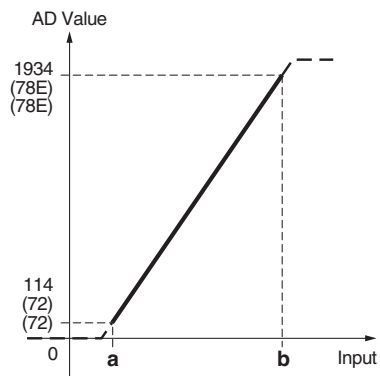
3901: AD value [decimal value]

(F3D): Offset Binary Type [hexadecimal value]

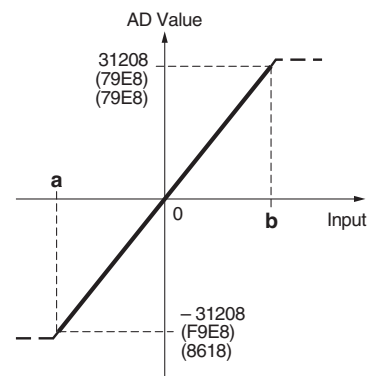
Signed Binary & 2 complement's Data Format



Input signal range	a
0 to 10V	10V
0 to 5V	5V
0 to 20mA	20mA



Input signal range	a	b
1 to 5V	1V	5V
4 to 20mA	4mA	20mA



Input signal range	a	b
-10 to 10V	-10V	10V
-5 to 5V	-5V	5V
-20 to 20mA	-20mA	20mA

Regarding AD value

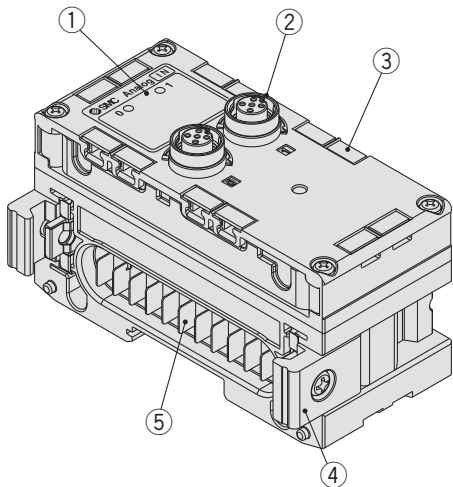
In the above graph, 2 AD values are explained as below.

-31208: AD value [decimal value]

(F9E8): Sign & Magnitude [Hexadecimal value]

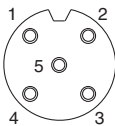
(8618): 2's complements [Hexadecimal value]

Part names



No.	Name
1	Status indication LED
2	Connector (Analog Input)
3	Maker groove
4	Joint bracket
5	Connector for unit (plug)

Connector (Analog Input) Pin Assignment

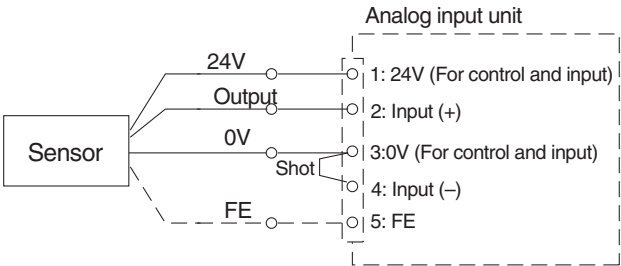


Pin No.	Signal name
1	24V (for control/input)
2	Input 2
3	0V (for control/input)
4	Input 1
5	FE

When connecting Analog Input, wiring method differs depending on which type of sensors is used. Refer to below diagram for wiring method example.

Especially when connecting [Analog output signal reference is 0V] and [2-wired analog current output] type sensor, short pin No.3 and pin No.4 . Otherwise it will not be correctly detected.

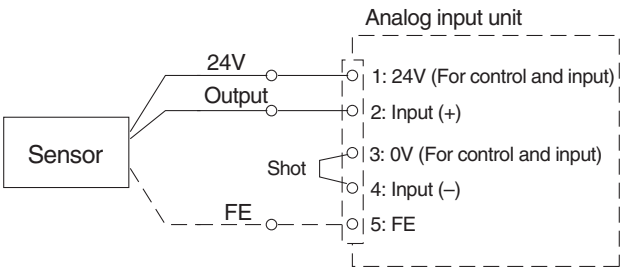
●When sensor with analog output signal reference is 0V is used.



Compatible SMC Product

- Pressure sensor: PSE53? Series
PSE54* Series
PSE550 Series
PSE56* Series
Flow sensor: PFM5* Series
PFMV5* Series
PF2A5* Series
PF2D5* Series
PF2W5* Series

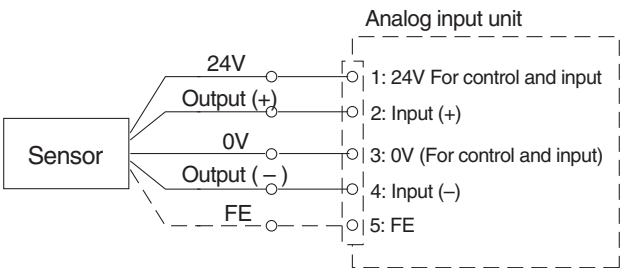
●When 20wire current output type sensor is used.



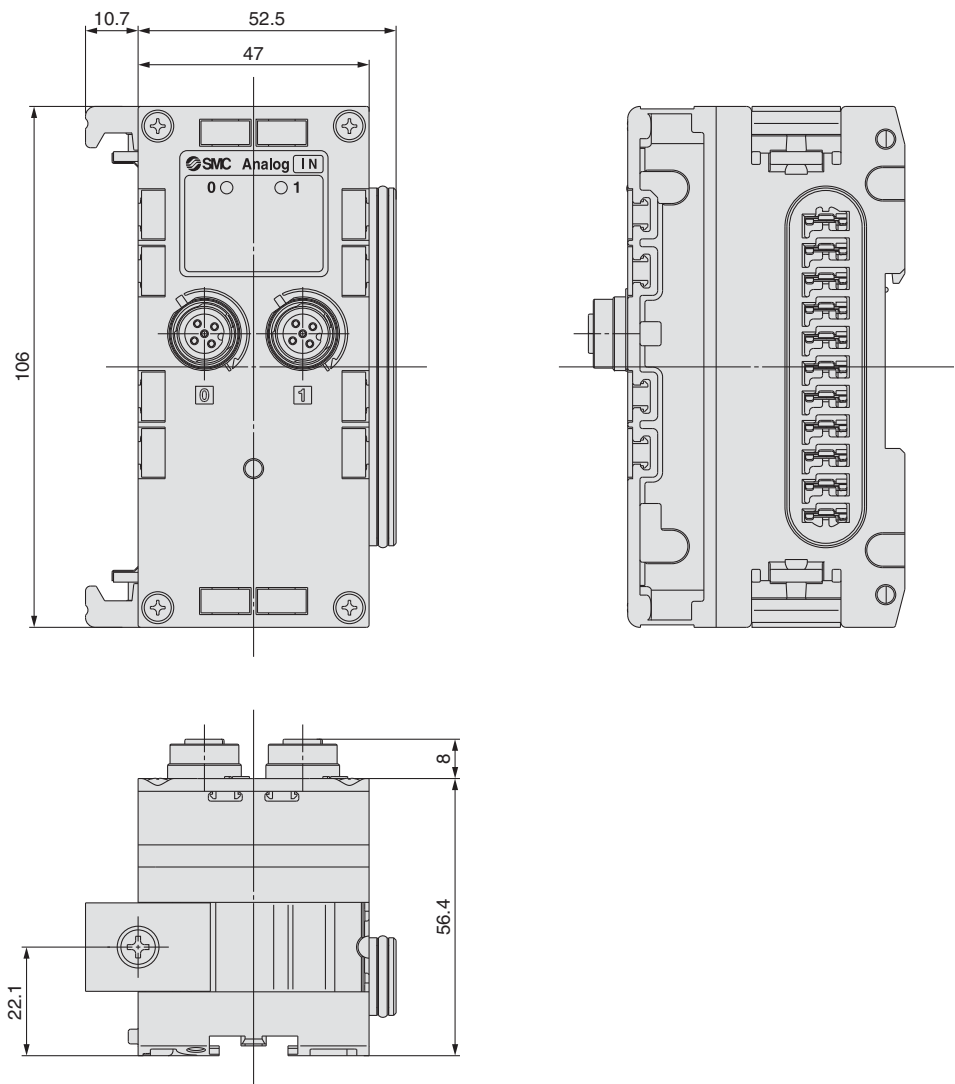
Compatible SMC Product

- Pressure sensor: PSE550-28 Series
PSE56*-*-28 Series

●When differential output type sensor is used



Outline Dimensions



Endplate

How to Order



EX600-ED2

EX600-ED3

EX600-ED3-2

End plate at D side

Connector

2	M12 (5Pin)
3	7/8 inch connector

Mounting method

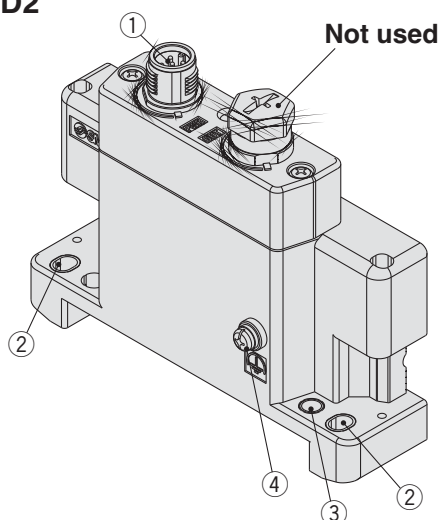
None	N DIN rail mounting plate
2	With DIN rail mounting plate

Specifications

Model		EX600-ED2	EX600-ED3
Input	Power connector	M12 (5 Pin) Plug	7/8 inch (5Pin) Plug
	Control, input power supply	DC24V±10% Maximum 2A	DC24V±10% Maximum 8A
	Output power supply	DC24V + 10%/-5% Maximum 2A	DC24V+10%/-5% Maximum 8A
Environmental	Enclosure	IP67 (Manifold assembly)	
	Operating temp. range	-10 to 50°C	
	Operating humidity range	35 to 85%RH (no dew condensation)	
	Withstand voltage	AC500V for 1 min. between external terminals and FE	
	Insulation resistance	DC500V, 10MΩ or more between external terminals and FE	
	Vibration resistance	10Hz to 57Hz with constant amplitude of 0.75mm-p 57Hz to 150Hz with constant acceleration of 49m/s ² for 2 hours in each direction of X, Y and Z direction (during de-energizing)	
Impact resistance		147m/s ² 3 times in each direction of X, Y and Z (during de-energizing)	
Standard		CE marking, UL recognition (CSA)	
Weight		170g	175g

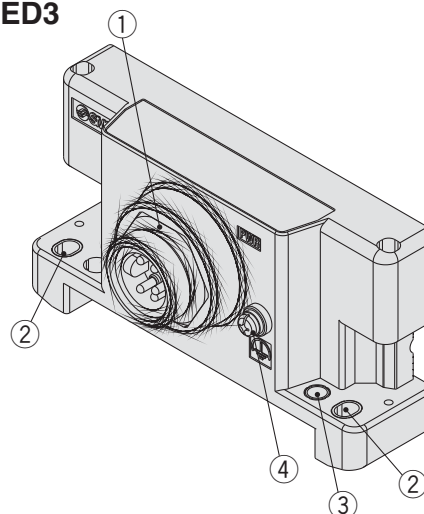
Part Names

EX600-ED2



No.	Name
1	Power connector
2	Fixing hole for direct mounting
3	DIN rail fixing hole
4	FE terminal

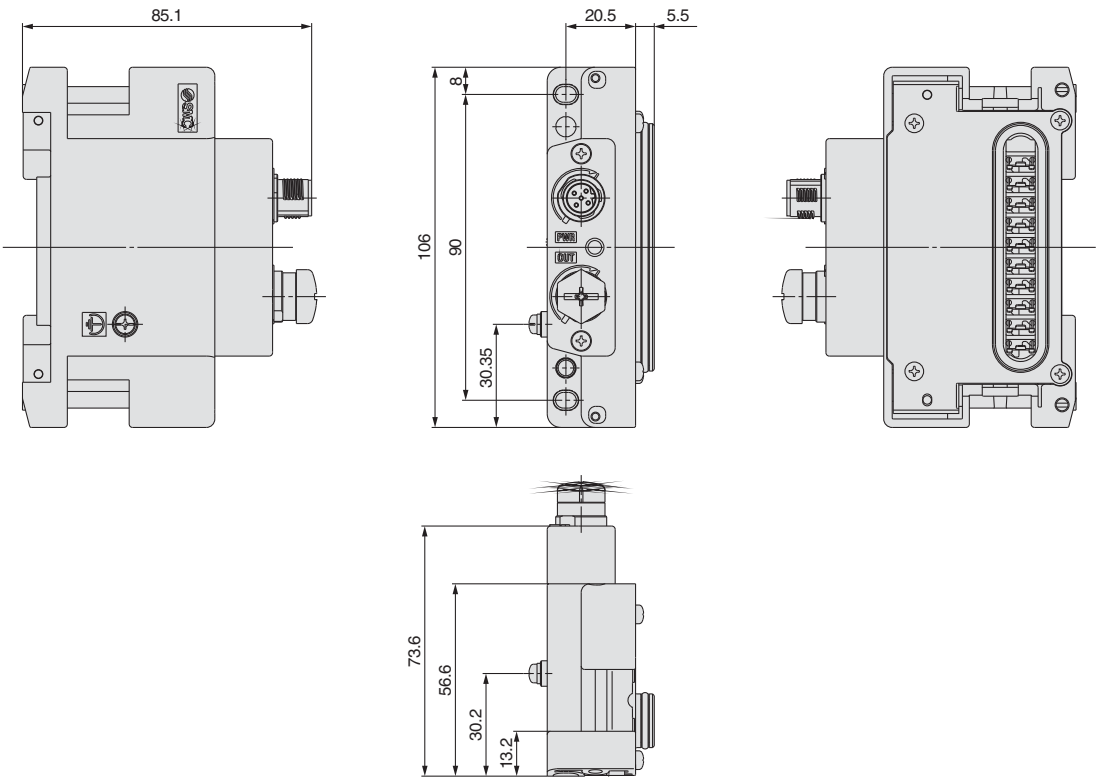
EX600-ED3



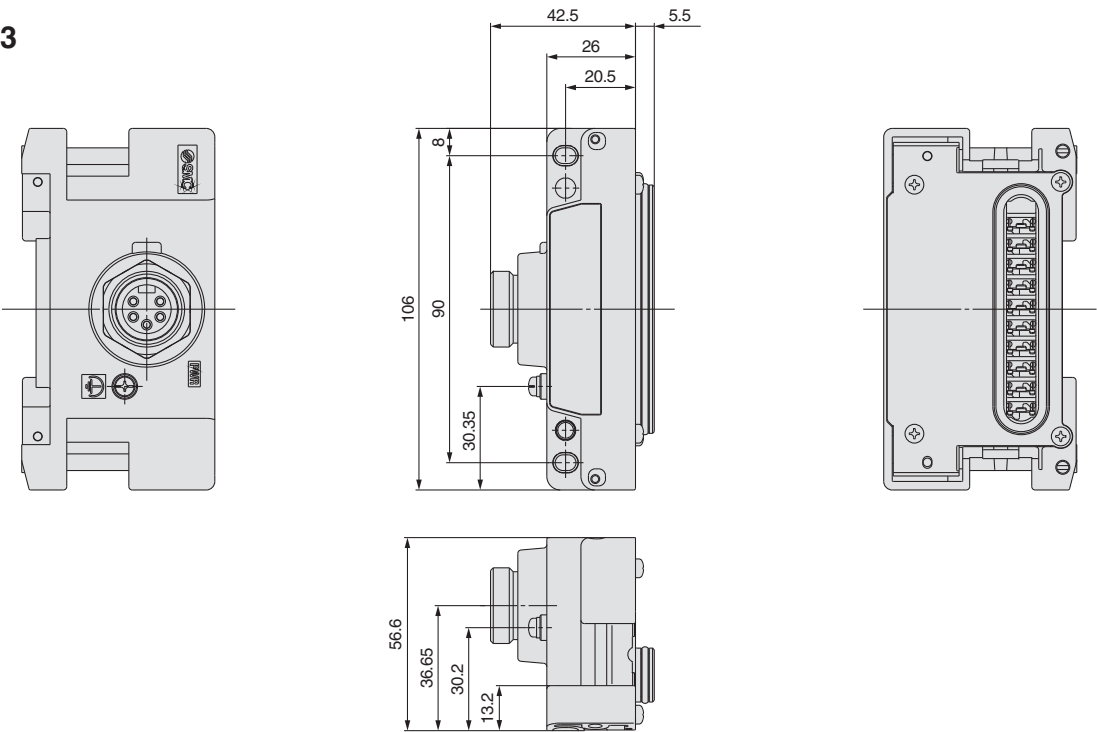
No.	Name
1	Power connector
2	Fixing hole for direct mounting
3	DIN rail fixing hole
4	FE terminal

Outline Dimensions

EX600-ED2



EX600-ED3





How to Order

Handheld Terminal



EX600 – HT 1 – 1

Handheld Terminal

Cable length for Hand held Terminal

Nil	No cable
1	1m
3	3m

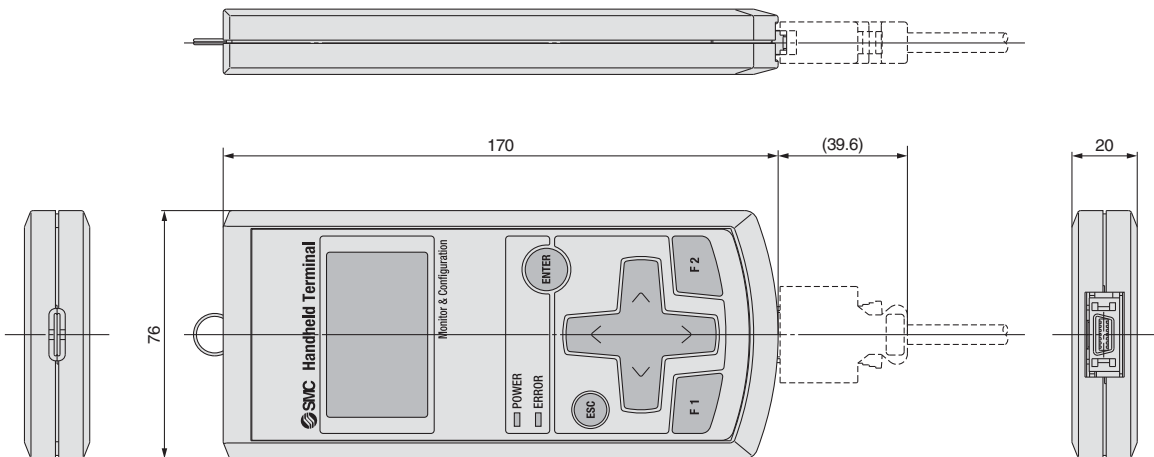
- Option
When option item is needed separately, please order using below part number.

Model Name	Model
Handheld terminal cable 1m	EX600-AC010-1
Handheld terminal cable 3m	EX600-AC030-1

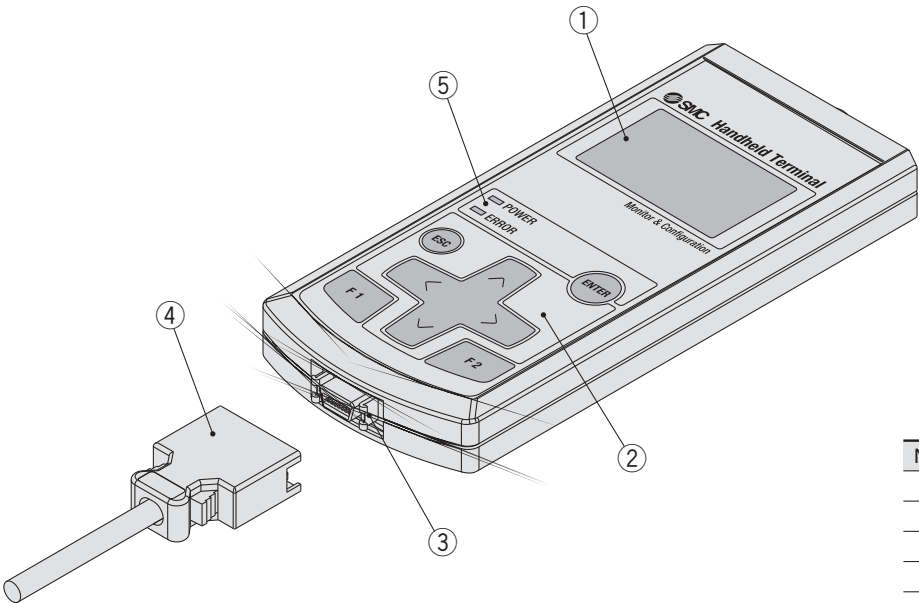
Specification

Model		EX600-HT1
Communication method		RS232C
Baud rate		9600bps
Power supply		Power supplied from SI unit connector (DC24V)
Current consumption		50mA or less
Display		LCD wit back light
Rsolution		128 × 64 dots
Connector		14-pin connector
Environmental	Protective structure	IP20
	Operating temperature	−10 to 50°C
	Temperature humidity	35 to 85% RH (no dew condensation)
	Withstand voltage	AC500V for 1 minute between frame and external terminals connected collectively
	Insulation resistance	10MΩ or more at 500VDC between frame and external terminals connected collectively
	Vibration resistance	10Hz to 57Hz: Constant amplitude 0.75mmp-p 57Hz to 150Hz: Constant acceleration 49m/s ² 2 hours for each, X, Y, Z direction (during de-energizing)
Impact standard		300m/s ² 3 times for each X, Y, Z direction (during de-energizing)
Standard		CE marking
Weight		160g

Outline Dimensions

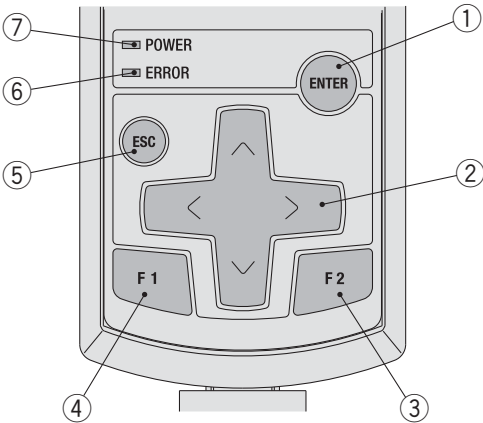


Part Names



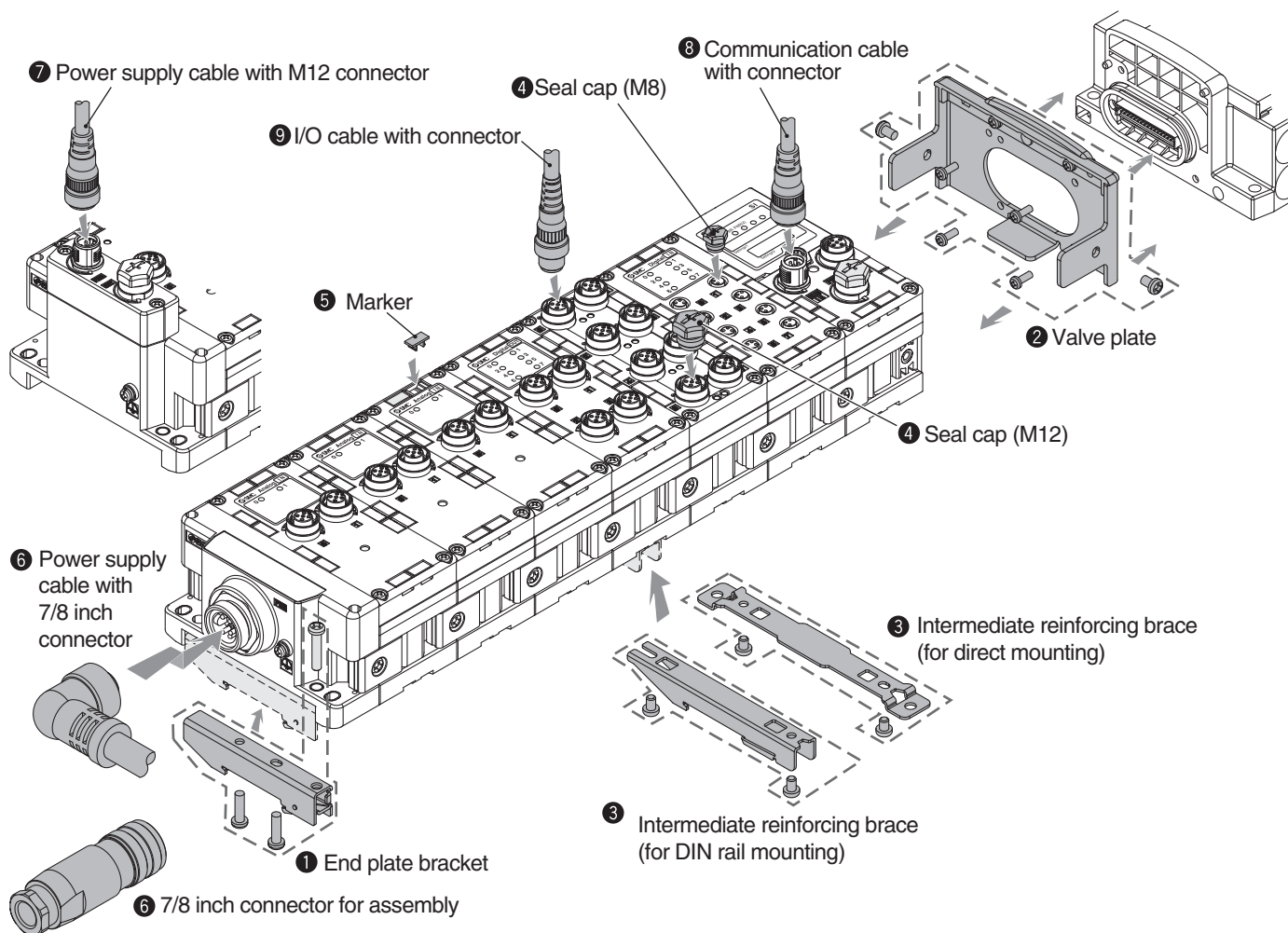
No.	Name
1	LCD display
2	Operation button
3	Connector
4	Handheld terminal cable
5	Status display LED

Operation Button and LED Details



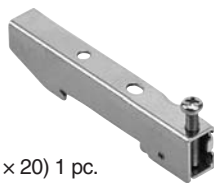
No.	Name
1	ENTER button
2	Cursor move button
3	F2 Button
4	F1 button
5	Escape button
6	Error status LED
7	Power status LEC

Accessories

**① End plate bracket**

This bracket is used for the end plate of DIN rail mounting

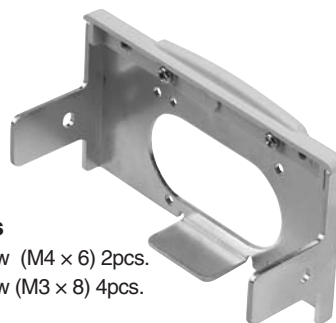
EX600-ZMA2

**Enclosed parts**

Round head screw (M4 × 20) 1 pc.
P-tight screw (4 × 14) 2 pcs.

② Valve plate

EX600-ZMV1

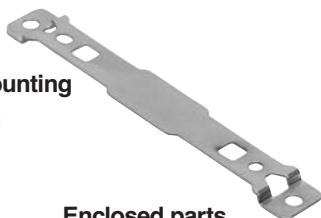
**Enclosed parts**

Round head screw (M4 × 6) 2pcs.
Round head screw (M3 × 8) 4pcs.

③ Intermediate reinforcing

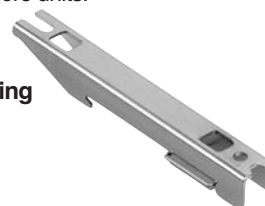
This bracket is used on the bottom of the unit at the intermediate position for connecting 6 or more units.

For direct mounting
EX600-ZMB1

**Enclosed parts**

Round head screw (M4 × 5) 2pcs.

For DIN rail mounting
EX600-ZMB2

**Enclosed parts**

Round head screw (M4 × 6) 2pcs.

Accessories

④ Seal cap (10pcs)

The seal cap needs to be placed the unused I/O connector. Placing the seal cap appropriately enable the unit to achieve IP67 protection.

EX9-AWES
for M8



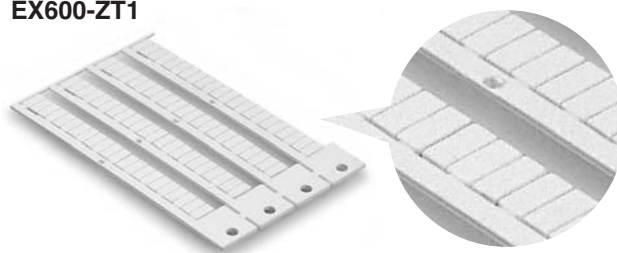
EX9-AWTS
for M12



⑤ Marker (1sheet, 88pcs.)

The signal name of I/O equipment and each unit address can be entered and mounted on each unit.

EX600-ZT1



⑥ 7/8 inch connector and its related parts

Power supply cable with 7/8 inch connector

PCA-1558810	Straight 2m
PCA-1558823	Straight 6m
PCA-1558836	Right angle 2m
PCA-1558849	Right angle 6m



■ SPEEDCON and its related parts

⑦ • Power supply cable with M12 connector (5 pins B code)

PCA-1564927	Straight 2m
PCA-1564930	Straight 6m
PCA-1564943	Right angle 2m
PCA-1564969	Right angle 6m



Note) For M12 connector, description of A code for a normal type and B code for reverse type is used as a connector shape respectively.

• 7/8 inch connector for assembly [compatible to AWG22-16]

PCA-1558797	Plug
PCA-1558807	Socket

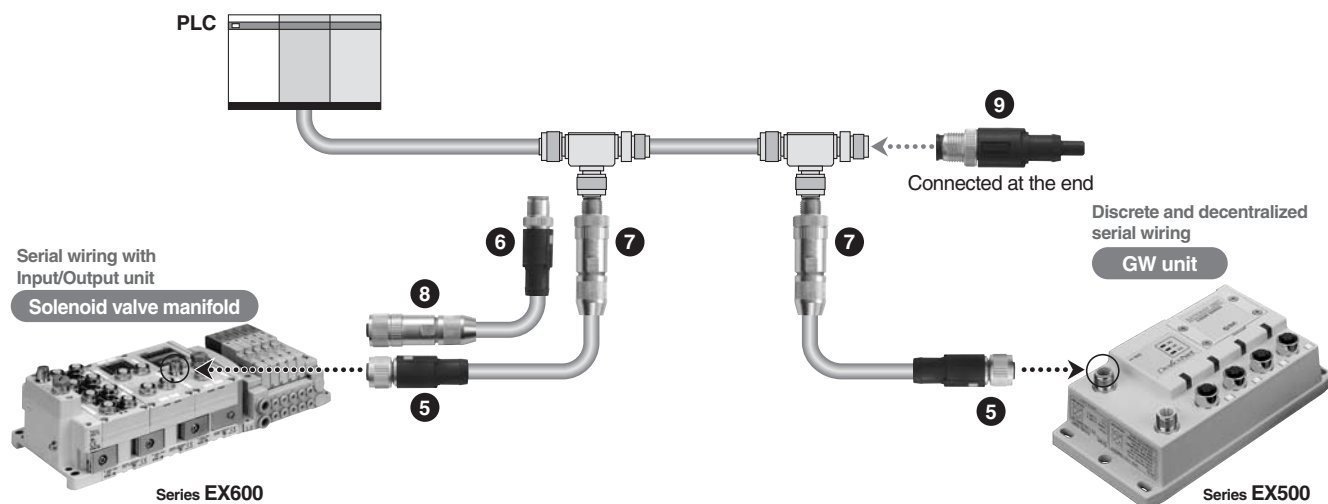









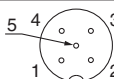
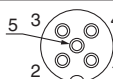

M12



Example of Connection

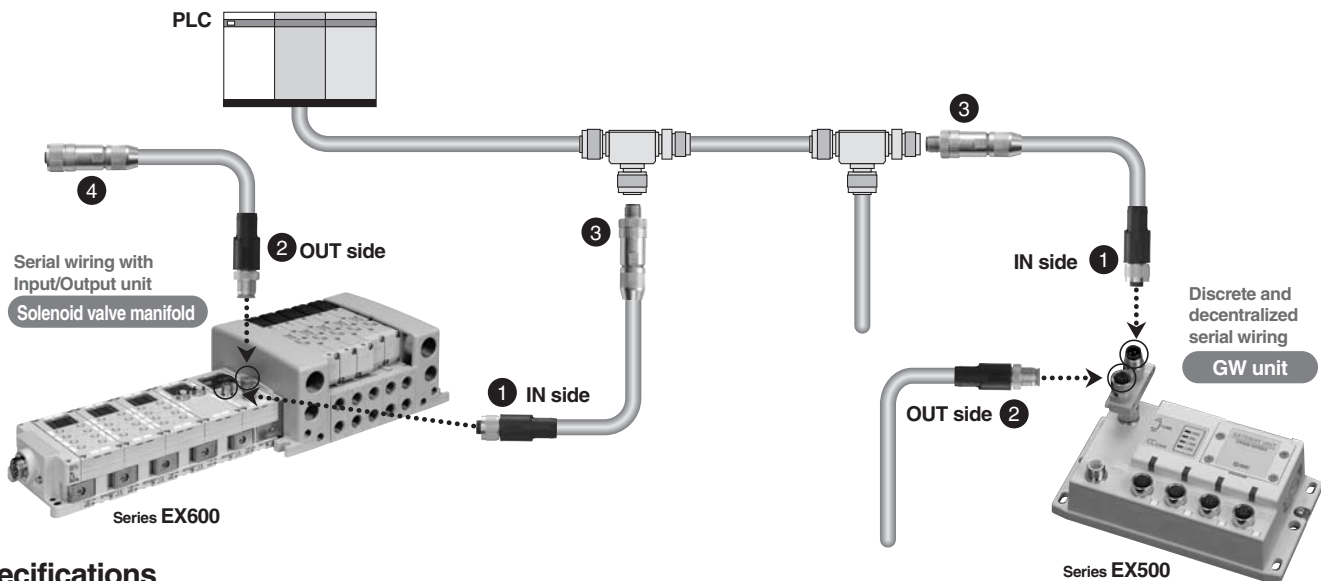


Specifications

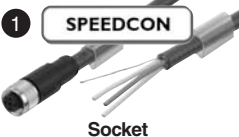
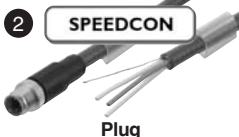




Description			Communication cable (With one side connector)		Fieldwireable connector		Terminal plug	
Part no.			PCA-1557633	PCA-1557646	PCA-1557659	PCA-1557662	PCA-1557675	
Product image			 Socket	 Plug	 Plug	 Socket	 For DeviceNet™ (Plug, A-coded)	
Number of functional poles			M12: 5 poles					
Key type			A-coded (Normal key)					
Pin assignment			 Plug, A-coded (Viewed from the plug/socket side)		 Socket, A-coded (Viewed from the plug/socket side)		DeviceNet™ 1: DRAIN 2: V+ (Red) 3: V- (Black) 4: CAN H (White) 5: CAN L (Blue) 	
Wiring specifications <small>(Note)</small>	Fixed cable length		5 m		—			
	Cable O.D.		6.70 ±0.3 mm		Applicable cable	4.0 to 8.0 mm	—	
	Wire gauge (Stranded wire cross section)	Power pair	0.33 mm²/AWG22			0.14 to 0.5 mm²/AWG26 to 20	—	
		Data pair	0.2 mm²/AWG24					
	Wire outer diameter (Including insulating material)	Power pair	1.4 ±0.05 mm			—		
		Data pair	2.05 ±0.10 mm					
Connection type			—		Spring-cage connection		—	
Rating/Performance	Rated current		4 A				—	
	Rated voltage		48 V				—	
	Contact resistance		≤5 mΩ				—	
	Insulation resistance		≥100 MΩ				—	
	Withstand voltage		1.0 kV				—	
	Ambient temperature	Connector		-25 to 90°C		-40 to 85°C		-25 to 90°C
		Cable	Operating	-20 to 75°C		—		—
			Fixed	-40 to 80°C		—		
	Protection class			IP67 (Only with screw tightened)				—
	Allowable repeated insertion/withdrawal			200				—
Cable retaining force			150 N/15 sec.		—			
Vibration resistance			10 to 500 Hz/98 m/s²				—	
Material	Material of knurl		Zinc for die casting		Brass		Zinc for die casting	
	Contact (Surface treatment)		CuSn (Au plating (Ni plating))				—	
	Insulating material		Thermoplastic polyurethane (TPU)		Polyamide (PA6.6)		Thermoplastic polyurethane (TPU)	
	Material of sheath		Polyurethane (PUR)		—			
Weight (Mass)			Approx. 308 g	Approx. 306 g	Approx. 47 g	Approx. 53 g	Approx. 12 g	

(Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

Example of Connection



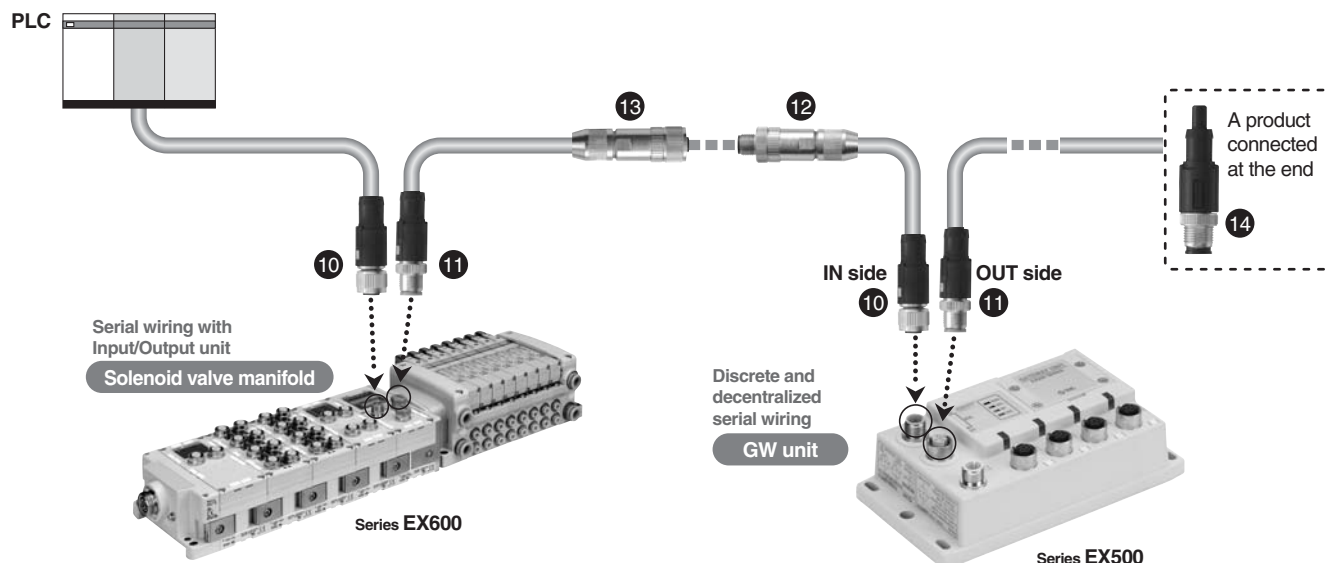
Specifications

Description			Communication cable (With one side connector)		Fieldwireable connector		
Part no.			PCA-1567720	PCA-1567717	PCA-1557617	PCA-1557620	
Product image			<div>①</div> <div></div> <div>Socket</div>	<div>②</div> <div></div> <div>Plug</div>	<div>③</div> <div></div> <div>Plug</div>	<div>④</div> <div></div> <div>Socket</div>	
Number of functional poles			M12: 4 poles				
Key type			A-coded (Normal key)				
Pin assignment			<div><div><div>4</div><div>3</div><div>1</div><div>2</div></div></div> <div>Plug, A-coded (Viewed from the plug/socket side)</div>		<div><div><div>3</div><div>4</div><div>2</div><div>1</div></div></div> <div>Socket, A-coded (Viewed from the plug/socket side)</div> <div><div>1: SLD (Shield wire)</div><div>2: DB (White)</div><div>3: DG (Yellow)</div><div>4: DA (Blue)</div></div>		
Wiring specifications (Note)	Fixed cable length		5 m		—		
	Cable O.D.		7.7 ±0.3 mm		Applicable cable	4.0 to 8.0 mm	
	Wire gauge (Stranded wire cross section)		0.5 mm²/AWG20			0.14 to 0.5 mm²/AWG26 to 20	
	Wire outer diameter (Including insulating material)		2.55 ±0.07 mm		—		
	Connection type		—		Spring-cage connection		
Rating/Performance	Rated current		4 A				
	Rated voltage		250 V		48 V		
	Contact resistance		≤5 mΩ				
	Insulation resistance		≥100 MΩ				
	Withstand voltage		1.4 kV				
	Ambient temperature	Connector		-25 to 90°C		-40 to 85°C	
		Cable	Operating	-20 to 60°C		—	
			Fixed	-20 to 60°C		—	
	Protection class		IP67 (Only with screw tightened)				
	Allowable repeated insertion/withdrawal		200				
Cable retaining force		150 N/15 sec.		—			
Vibration resistance		10 to 500 Hz/98 m/s²					
Material	Material of knurl		Zinc for die casting		Brass		
	Contact (Surface treatment)		CuSn (Au plating (Ni plating))				
	Insulating material		Thermoplastic polyurethane (TPU)		Polyamide (PA6.6)		
	Material of sheath		Polyvinyl chloride (PVC)		—		
Weight (Mass)			Approx. 306 g	Approx. 308 g	Approx. 48 g	Approx. 53 g	






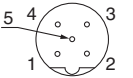
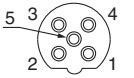
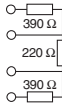
(Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.



Example of Connection



Specifications

Description			Communication cable (With one side connector)		Fieldwireable connector		Terminal plug
Part no.			PCA-1557688	PCA-1557691	PCA-1557701	PCA-1557714	PCA-1557727
Product image			<div> Socket</div>	<div> Plug</div>	<div> Plug</div>	<div> Socket</div>	<div> For PROFIBUS DP (Plug, B-coded)</div>
Number of functional poles			M12: 2 poles		M12: 3 poles		M12: 4 poles
Key type			B-coded (Reverse key)				
Pin assignment			<div> Plug, B-coded (Viewed from the plug/socket side)</div>		<div> Plug, B-coded (Viewed from the plug/socket side)</div>		<div><p>1: — 2: A Line (Green) 3: — 4: B Line (Red) 5: —</p><p>1: VP 4: B Line 2: A Line 3: DGND</p></div>
Wiring specifications (Note)	Fixed cable length		5 m		—		
	Cable O.D.		7.80 ±0.2 mm		Applicable cable	4.0 to 8.0 mm	—
	Wire gauge (Stranded wire cross section)		0.34 mm²/AWG22			0.14 to 0.5 mm²/AWG26 to 20	—
	Wire outer diameter (Including insulating material)		2.55 ±0.07 mm		—		
Connection type			—		Spring-cage connection		—
Rating/Performance	Rated current		4 A				—
	Rated voltage		60 V		48 V		60 V
	Contact resistance		≤5 mΩ				
	Insulation resistance		≥100 MΩ				
	Withstand voltage		1.4 kV				
	Ambient temperature	Connector	-25 to 90°C		-40 to 85°C		-25 to 90°C
		Cable	Operating	-20 to 80°C		—	
	Fixed		-40 to 85°C		—		
	Protection class			IP67 (Only with screw tightened)			
	Allowable repeated insertion/withdrawal			200			
Cable retaining force			150 N/15 sec.		—		
Vibration resistance			10 to 500 Hz/98m/s²				
Material	Material of knurl		Zinc for die casting		Brass		Zinc for die casting
	Contact (Surface treatment)		CuSn (Au plating (Ni plating))				
	Insulating material		Polyamide (PA6.6)				
	Material of sheath		Polyurethane (PUR)		—		
Weight (Mass)			Approx. 343 g	Approx. 356 g	Approx. 48 g	Approx. 54 g	Approx. 12 g

Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

Dimensions

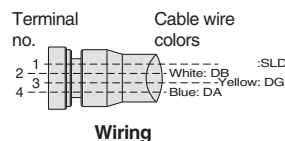
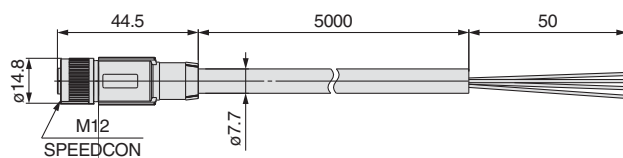
Communication cable (With one side connector)

CC-Link

- 1 PCA-1567720**
For CC-Link
(Socket)



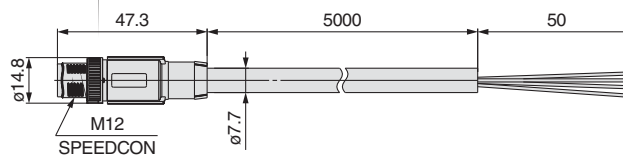
Socket connector pin assignment
A-coded (Normal key)



- 2 PCA-1567717**
For CC-Link
(Plug)

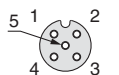


Plug connector pin assignment
A-coded (Normal key)

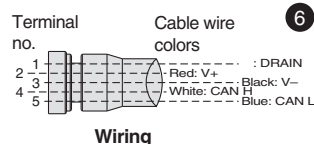
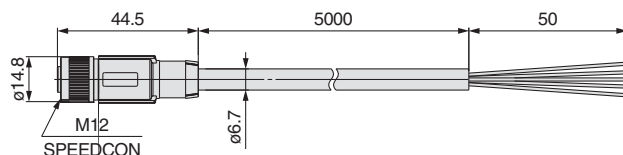


DeviceNet™

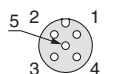
- 5 PCA-1557633**
For DeviceNet™
(Socket)



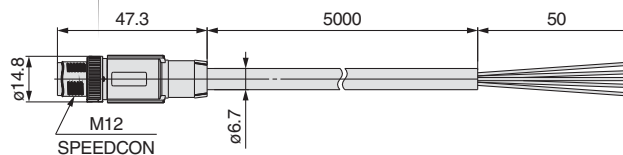
Socket connector pin assignment
A-coded (Normal key)



- 6 PCA-1557646**
For DeviceNet™
(Plug)

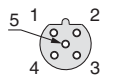


Plug connector pin assignment
A-coded (Normal key)

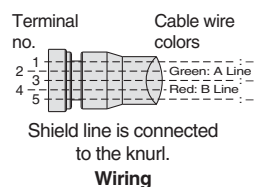
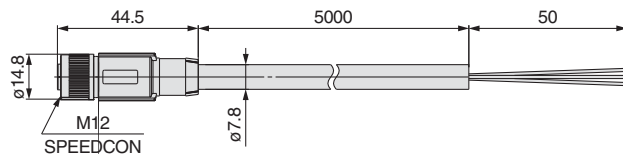


PROFIBUS

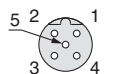
- 10 PCA-1557688**
For PROFIBUS DP
(Socket)



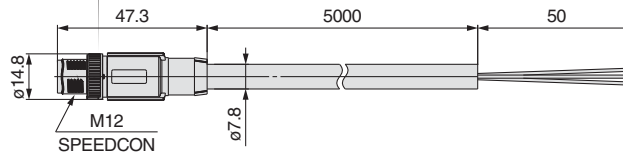
Socket connector pin assignment
B-coded (Reverse key)



- 11 PCA-1557691**
For PROFIBUS DP
(Plug)



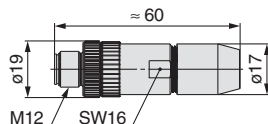
Plug connector pin assignment
B-coded (Reverse key)



Fieldwireable connector

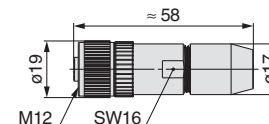
Plug

- 3 PCA-1557617** For CC-Link
7 PCA-1557659 For DeviceNet™
12 PCA-1557701 For PROFIBUS DP



Socket

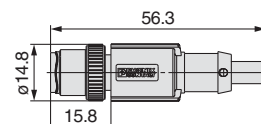
- 4 PCA-1557620** For CC-Link
8 PCA-1557662 For DeviceNet™
13 PCA-1557714 For PROFIBUS DP



Terminal plug

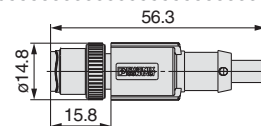
DeviceNet™

- 9 PCA-1557675**
Terminal resistor
for DeviceNet™



PROFIBUS

- 14 PCA-1557727**
Terminal resistor
for PROFIBUS DP



Specifications

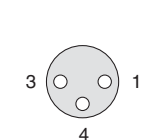
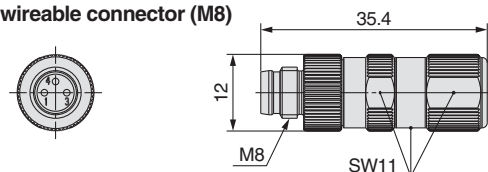
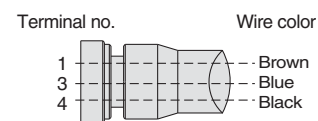
Part no.		PCA-1557730	PCA-1557743	PCA-1557756
Product image/Pin assignment				
Number of functional poles		M8: 3 poles	M12: 4 poles	
Key type		—	A-coded (Normal key)	
Wiring specifications (Note)	Applicable cable	Cable O.D.	3.0 to 5.0 mm	3.5 to 6.0 mm
	Wire gauge (Stranded wire cross section)	0.14 to 0.25 mm ² /AWG26 to 24 0.25 to 0.34 mm ² /AWG24 to 22	0.14 to 0.34 mm ² /AWG26 to 22	0.34 to 0.75 mm ² /AWG22 to 18
	Core wire diameter (Including insulating material)	1.0 to 1.6 mm	0.7 to 1.3 mm	1.3 to 2.5 mm
Connection type		Piercecon® connection	QUICKON-ONE connection	
Rating/Performance	Rated current	4 A		
	Rated voltage	60 V	250 V	
	Contact resistance	≤5 mΩ		
	Insulation resistance	≥100 MΩ		
	Withstand voltage	1.0 kV	1.4 kV	
	Ambient temperature	−40 to 85°C	−25 to 80°C	
	Protection class	IP67 (Only with screw tightened)		
	Allowable repeated insertion/withdrawal	100	200	
Material	Material of knurl	Brass	Zinc for die casting	
	Contact (Surface treatment)	CuZn (Au plating (Ni plating))		
	Insulating material	Polyamide (PA6.6)		
Weight (Mass)		Approx. 14 g	Approx. 13 g	Approx. 15 g

Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

Dimensions

PCA-1557730

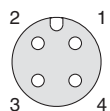
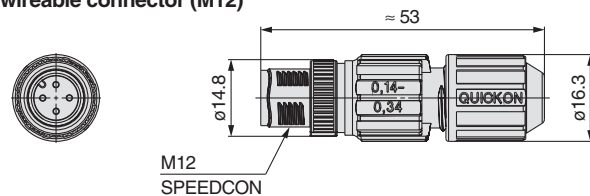
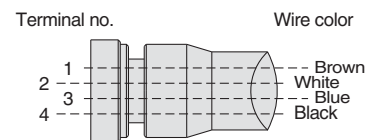
Fieldwireable connector (M8)

Plug connector
pin assignment

Wiring

PCA-1557743

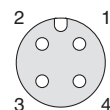
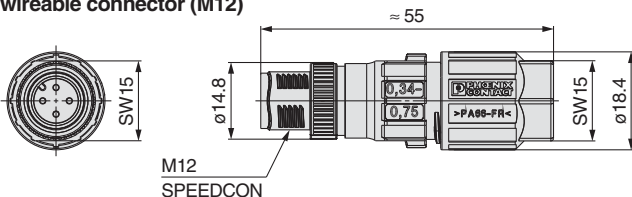
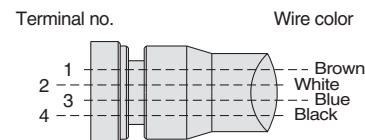
Fieldwireable connector (M12)

Plug connector
pin assignment
A-coded (Normal key)

Wiring



PCA-1557756

Fieldwireable connector (M12)

Plug connector
pin assignment
A-coded (Normal key)

Wiring

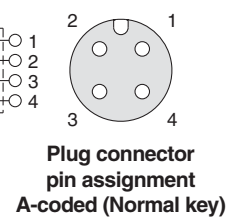
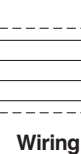
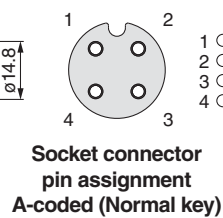
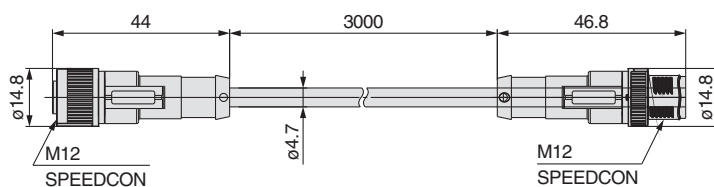
Specifications

Part no.	PCA-1557769	PCA-1557772
Product image		
Number of functional poles	M12: 4 poles	M8: 3 poles
Key type	A-coded (Normal key)	—
Fixed cable length	3 m	
Cable O.D.	4.7 ±0.15 mm	4.4 ±0.15 mm
Wire gauge (Stranded wire cross section)	0.34 mm²/AWG22	0.25 mm²/AWG24
Rated current	4 A	
Rated voltage	250 V	60 V
Contact resistance	≤5 mΩ	
Insulation resistance	≥100 MΩ	
Withstand voltage	1.4 kV	1.0 kV
Ambient temperature	Connector	—25 to 90°C
	Cable	—5 to 80°C
	Operating Fixed	—40 to 80°C
Protection class	IP67 (Only with screw tightened)	
Allowable repeated insertion/withdrawal	200	
Cable retaining force	150 N/15 sec.	250 N/15 sec.
Vibration resistance	10 to 500 Hz/98 m/s²	
Material of knurl	Zinc for die casting	
Contact (Surface treatment)	CuSn (Au plating (Ni plating))	
Insulating material	Thermoplastic polyurethane (TPU)	
Material of sheath	Polyurethane Black (PUR Black)	
Weight (Mass)	Approx. 111 g	Approx. 80 g

Dimensions

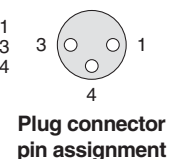
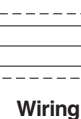
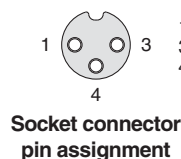
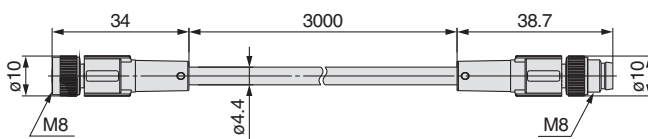
PCA-1557769

Cable with M12 connector (4 poles)




PCA-1557772

Cable with M8 connector (3 poles)



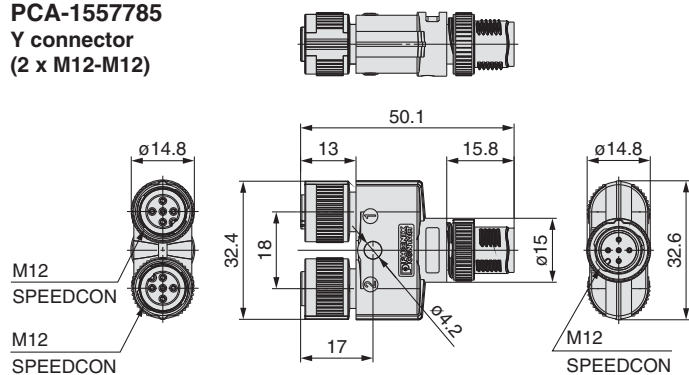
Y Connector

Specifications

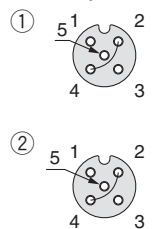
Part no.		PCA-1557785
Product image		
Number of functional poles		2 x M12: 4 poles + PE – M12: 4 poles + PE
Key type		A-coded (Normal key)
Rating/Performance	Rated current	4 A
	Rated voltage	60 V
	Contact resistance	≤5 mΩ
	Insulation resistance	≥100 MΩ
	Withstand voltage	1.0 kV
	Ambient temperature	–25 to 90°C
	Protection class	IP67 (Only with screw tightened)
Material	Allowable repeated insertion/withdrawal	200
	Vibration resistance	10 to 500 Hz/98 m/s ²
	Material of knurl	Zinc for die casting
	Contact (Surface treatment)	CuZn (Au plating (Ni plating))
Insulating material		Thermoplastic polyurethane (TPU)
Weight (Mass)		Approx. 29 g

Dimensions

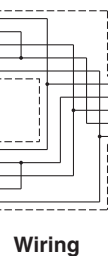
PCA-1557785
Y connector
(2 x M12-M12)



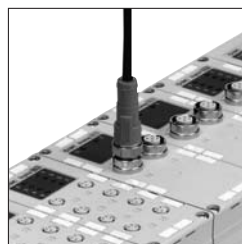
Socket connector
pin assignment
A-coded (Normal key)



Socket connector
pin assignment
A-coded (Normal key)



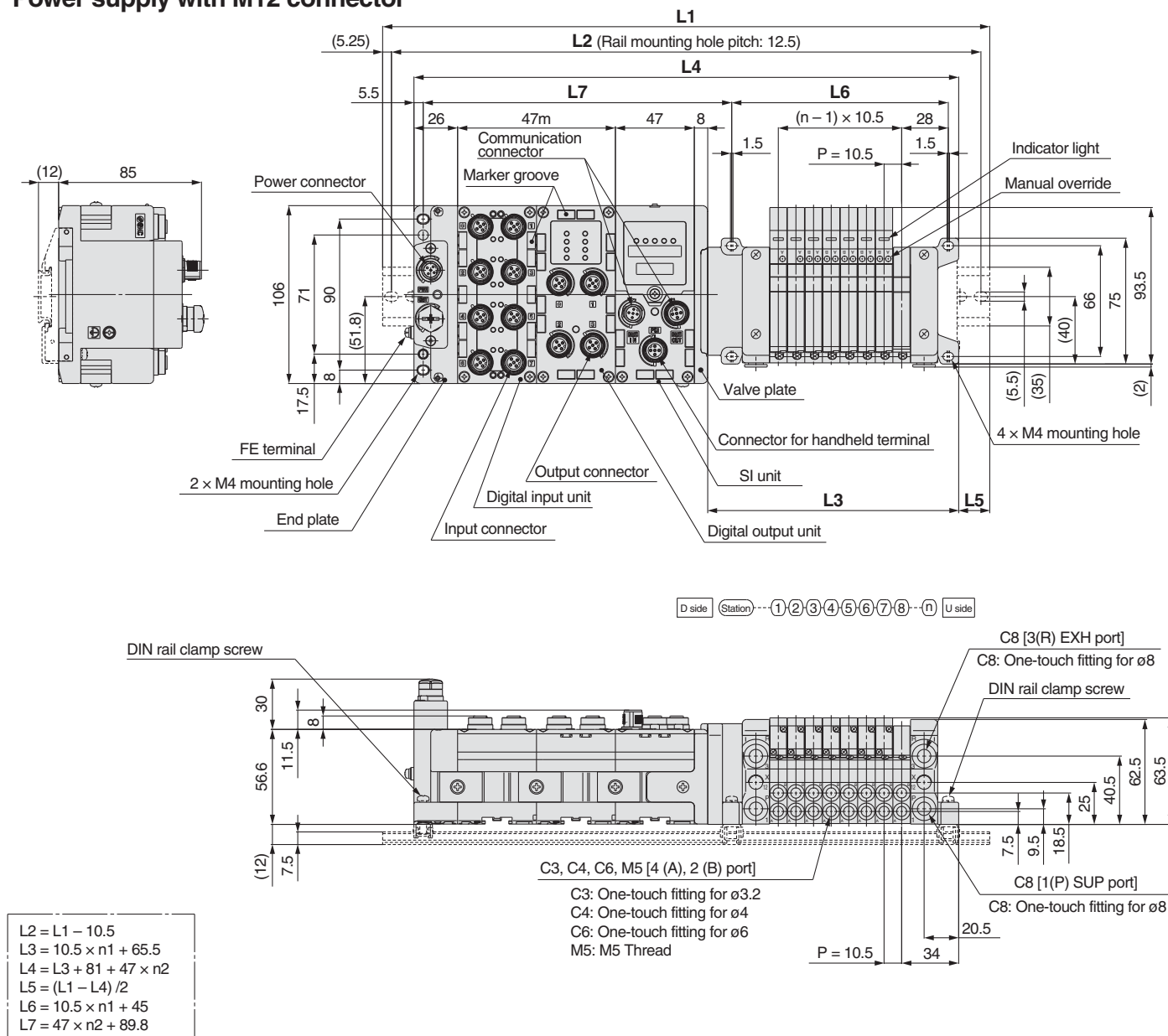
Plug connector
pin assignment
A-coded (Normal key)



Connection image

Outline Dimensions

Power supply with M12 connector

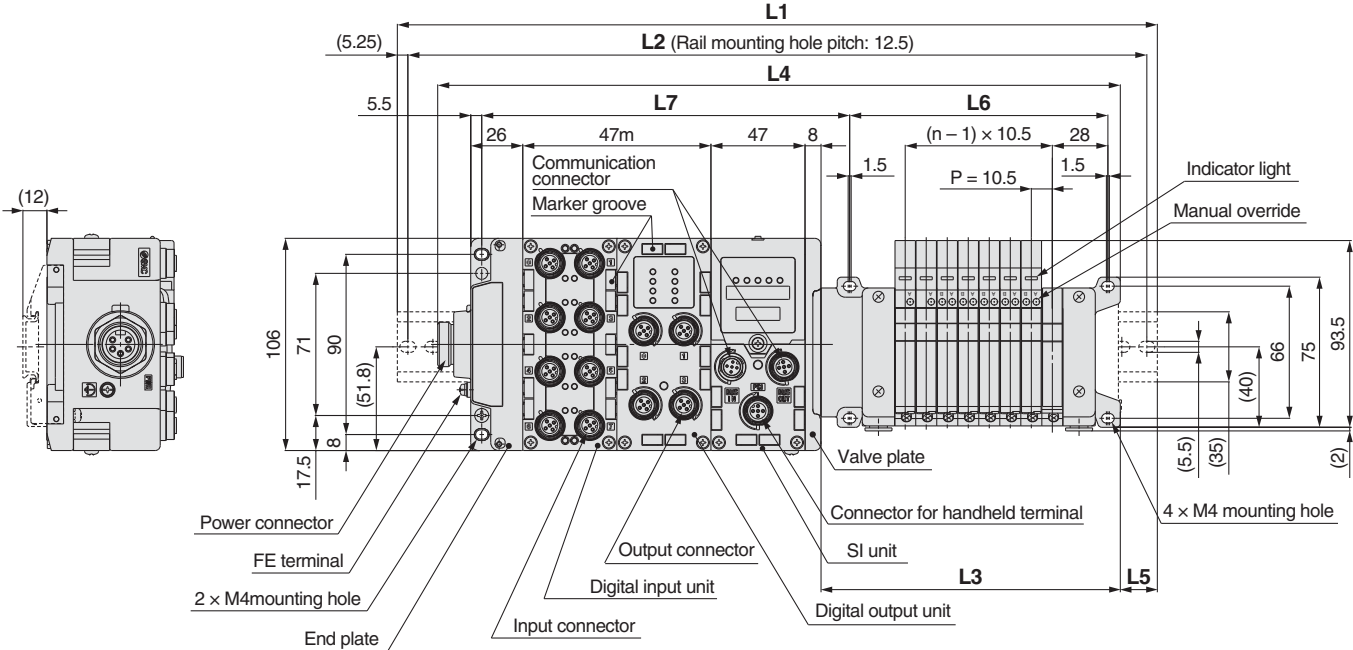


L1: DIN rail overall length

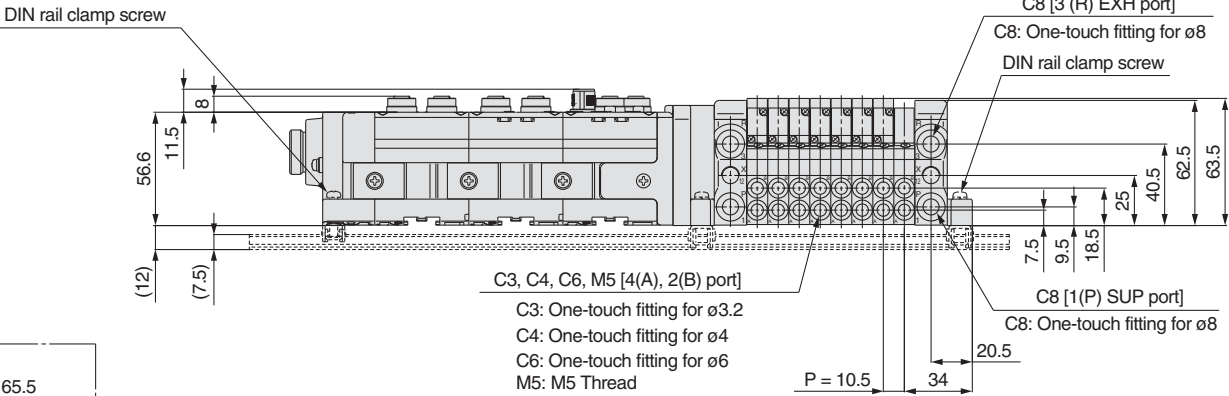
Valve stations (n2)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
I/O unit stations (n2)	0	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5
1	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	
2	285.5	298	310.5	323	323	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498	510.5	523	523	
3	335.5	348	360.5	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	560.5	560.5	573	
4	385.5	385.5	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	585.5	598	610.5	623	
5	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5	598	610.5	623	623	635.5	648	660.5	673	
6	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	710.5	
7	523	535.5	548	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	685.5	685.5	698	710.5	723	735.5	748	748	760.5	
8	573	585.5	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	710.5	723	735.5	748	760.5	773	773	785.5	798	810.5	
9	610.5	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	748	748	760.5	773	785.5	798	810.5	810.5	823	835.5	848	860.5	

Outline Dimensions

Power supply with 7/8 inch connector



D side Station 1 2 3 4 5 6 7 8 n U side



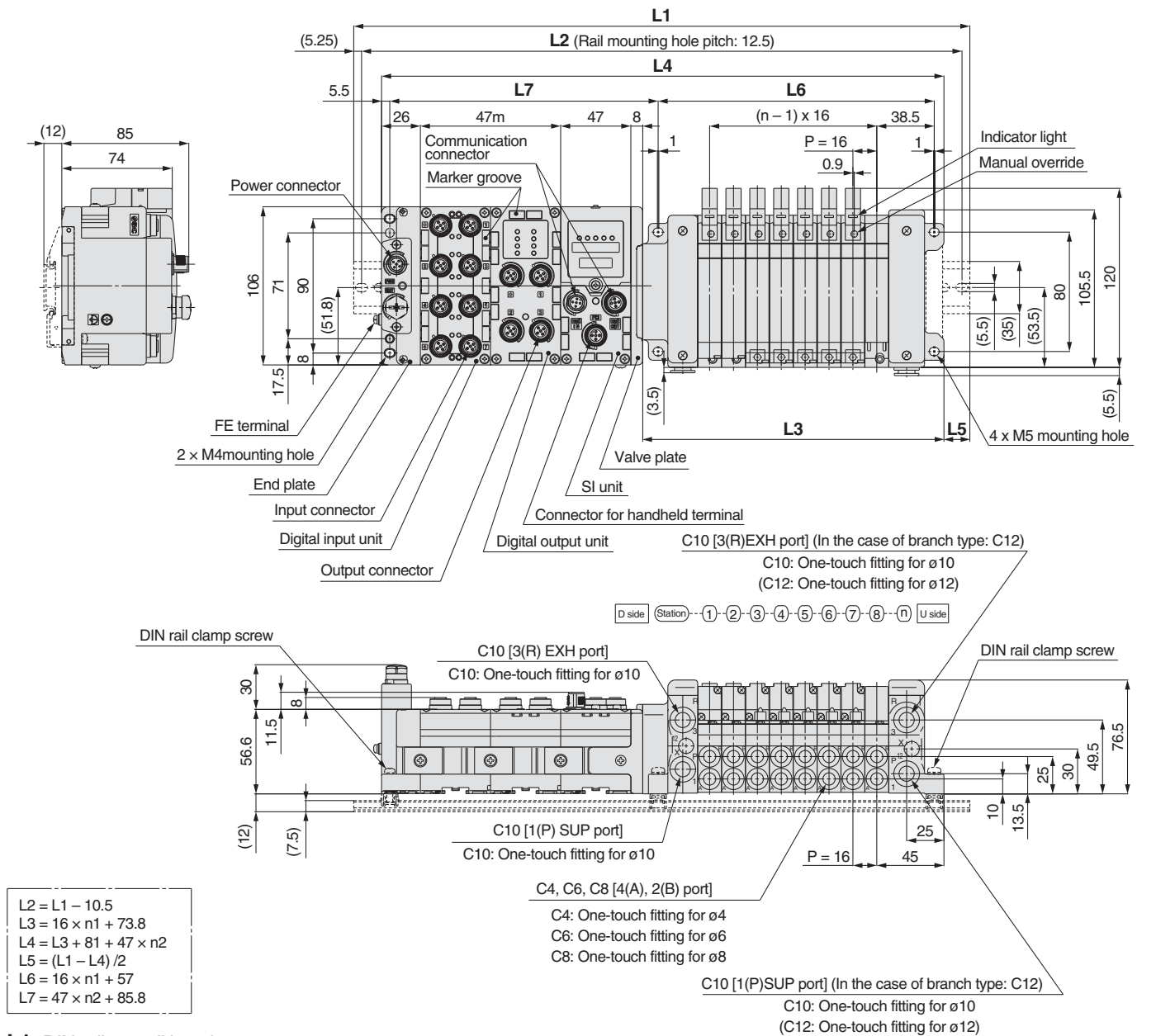
$L2 = L1 - 10.5$
 $L3 = 10.5 \times n1 + 65.5$
 $L4 = L3 + 97.5 + 47 \times n2$
 $L5 = (L1 - L4)/2$
 $L6 = 10.5 \times n1 + 45$
 $L7 = 47 \times n2 + 89.8$

L1: DIN rail overall length

Valve stations (n1) I/O unit stations (n2)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	210.5	223	235.5	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	360.5	373	373	385.5	398	410.5	423	435.5	435.5	448
1	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498
2	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	410.5	423	435.5	435.5	448	460.5	473	485.5	498	498	510.5	523	535.5	548
3	348	360.5	373	385.5	398	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	598
4	398	410.5	423	423	435.5	448	460.5	473	485.5	498	498	510.5	523	535.5	548	560.5	560.5	573	585.5	598	610.5	623	623	635.5
5	448	460.5	460.5	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	585.5	598	610.5	623	635.5	648	660.5	660.5	673	685.5
6	485.5	498	510.5	523	535.5	548	560.5	560.5	573	585.5	598	610.5	623	623	635.5	648	660.5	673	685.5	685.5	698	710.5	723	735.5
7	535.5	548	560.5	573	585.5	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	723	723	735.5	748	760.5	773	785.5
8	585.5	598	610.5	623	623	635.5	648	660.5	673	685.5	685.5	698	710.5	723	735.5	748	748	760.5	773	785.5	798	810.5	810.5	823
9	635.5	648	648	660.5	673	685.5	698	710.5	710.5	723	735.5	748	760.5	773	785.5	785.5	798	810.5	823	835.5	848	848	860.5	873

Outline Dimensions

Power supply with M12 connector

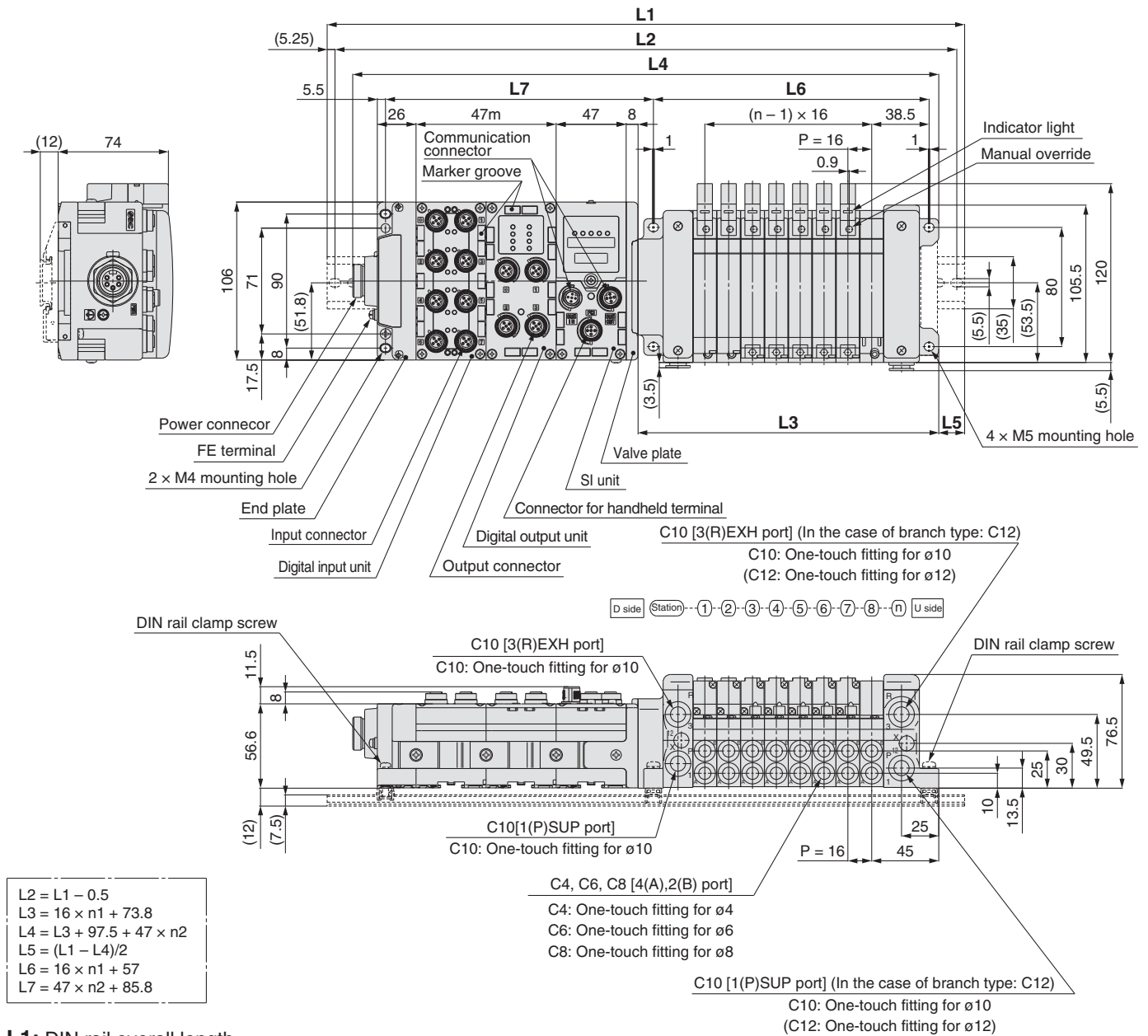


L1: DIN rail overall length

Valve stations (n1) I/O unit stations (n2)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573
1	248	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623
2	298	323	335.5	348	360.5	385.5	398	410.5	423	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	610.5	623	635.5	648	673
3	348	360.5	385.5	398	410.5	423	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	673	685.5	698	710.5
4	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	673	685.5	698	710.5	735.5	748	760.5
5	448	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	735.5	748	760.5	773	798	810.5
6	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	798	810.5	823	835.5	860.5
7	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	798	810.5	823	835.5	860.5	873	885.5	898
8	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	860.5	873	885.5	898	923	935.5	948
9	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	848	873	885.5	898	923	935.5	948	960.5	985.5	998.5

Outline Dimensions

Power supply with 7/8 inch connector

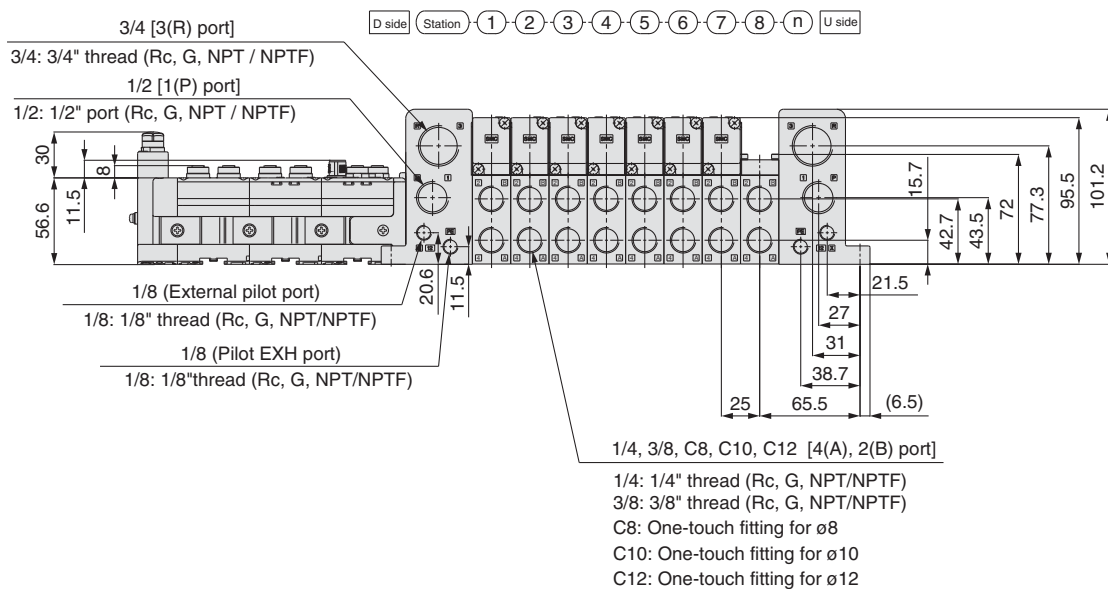
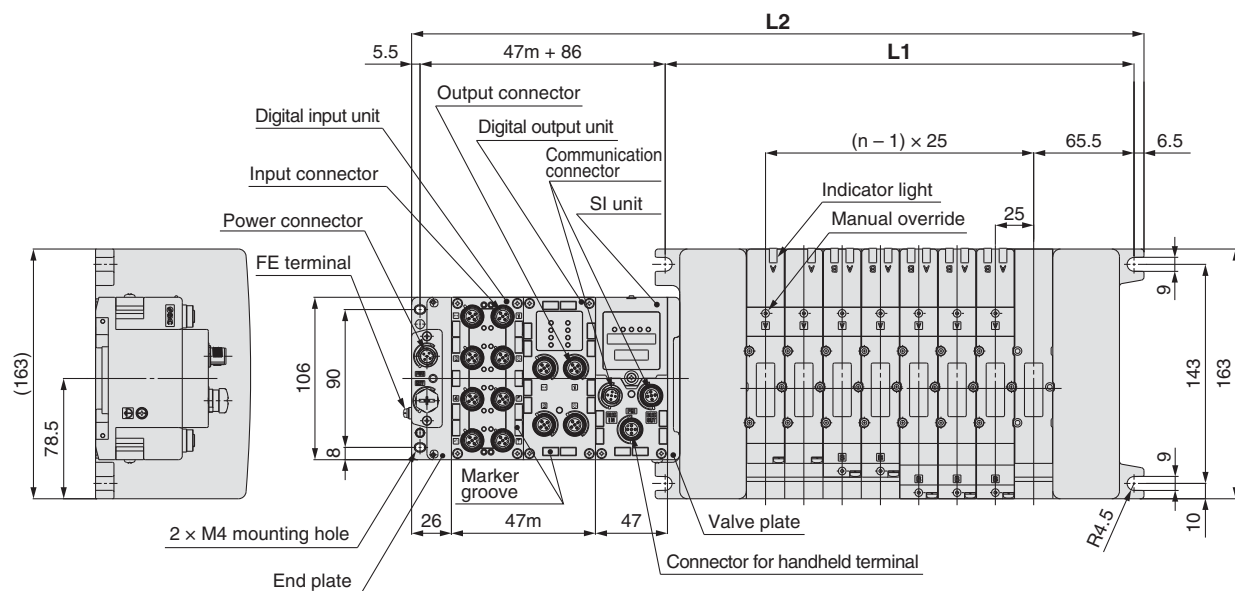


L1: DIN rail overall length

Valve stations (n1)	I/O unit stations (n2)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0		223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	485.5	498	510.5	523	548	560.5	573	585.5
1		273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623	635.5
2		323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	610.5	623	635.5	648	673	685.5
3		360.5	385.5	398	410.5	423	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	610.5	623	635.5	648	673	685.5	698	710.5	735.5
4		410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	735.5	748	760.5	785.5
5		460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	735.5	748	760.5	773	798	810.5	823
6		510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	798	810.5	823	835.5	860.5	873
7		548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	798	810.5	823	835.5	860.5	873	885.5	910.5	923
8		598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	860.5	873	885.5	898	923	935.5	948	973
9		648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	860.5	873	885.5	898	923	935.5	948	960.5	985.5	998.5	—

Outline Dimensions

Power supply with M12 connector



Formulas

$$L1 = 25n + 106$$

$$L2 = 25n + 184$$

note) L2 is outline dimension without I/O unit. For input block. Add 47mm for each additional input block.

note) "m" is number of I/O unit.

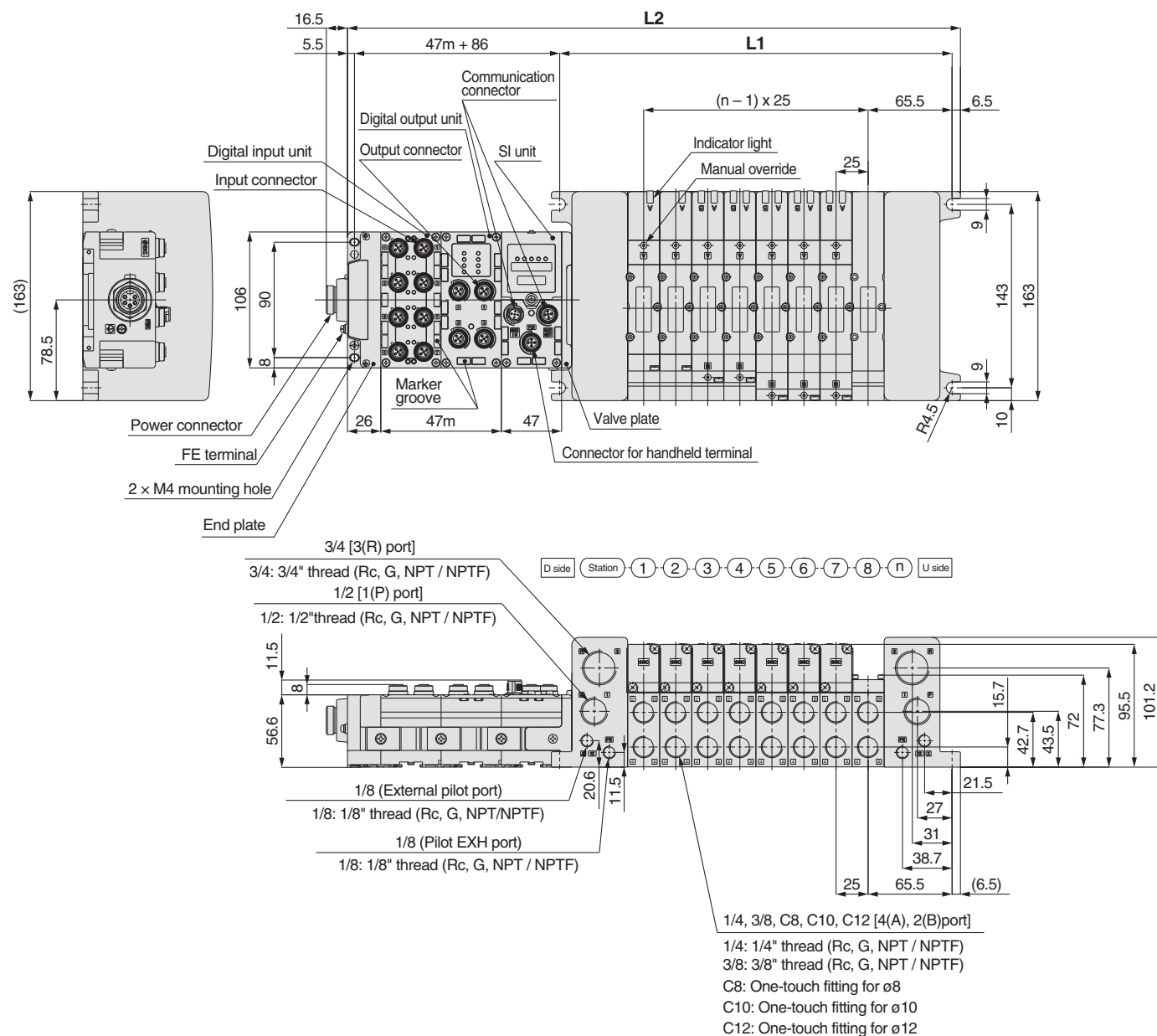
Dimensions

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	209	234	259	284	309	334	359	384	409	434	459	484	509	534	559	584

Outline Dimensions

Power supply with 7/8 inch connector



Formulas

$$L1 = 25n + 106$$

$$L2 = 25n + 184$$

Note) L2 is outline dimension without I/O unit. For input block. Add 47mm for each additional input block.

Note) "m" is number of I/O unit.

Dimensions

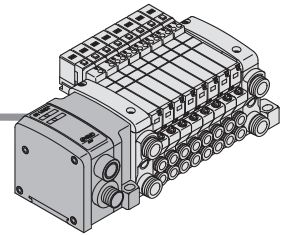
n: stations (Maximum 16 stations)

Dimensions				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	209	234	259	284	309	334	359	384	409	434	459	484	509	534	559	584

S VQC1000/2000/4000

Series EX500 Decentralized Serial wiring

Conforms to IP67



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



How to Order

EX500 — G **DN** 1

Communication protocol

DN	DeviceNet
PR	PROFIBUS-DP
AB	Remote I/O (RIO)

Applicable GW unit

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

Specifications

Model	EX500-GAB1-X1	EX500-GDN1	EX500-GPR1
Applicable PLC Communication protocol	Rockwell Automation PLC	DeviceNet Release 2.0	PROFIBUS-DP
Communication speed	57.6Kbit/sec, 115.2Kbit/sec 230.4Kbit/sec	125Kbit/sec, 250Kbit/sec 500Kbit/sec	9.6, 19.2, 93.75, 187.5, 500Kbit/sec 1.5, 3, 6, 12Mbit/sec
Rated voltage	24VDC		
Power supply voltage range	Input and control unit power supply: 24VDC ±10% Solenoid valve power supply: 24VDC +10%/-5% (with power drop warning at approx. 20V)		
Current consumption	200mA 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	5m or less (total extension 10m or less)		
Communication connector	M12 connector (8-pin, socket)		
Power connector	M12 connector (5-pin, plug)		
Ambient operating temperature and humidity	+5° to +45°C at 35% to 85% RH (no condensation)		
Enclosure	IP65		
Applicable standard	UL, CSA, CE		

* Communication cables and communication connectors are sold separately.

Input Block



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 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)

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 block 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-pin, plug)
Number of connection blocks	Maximum 8 blocks
Block supply voltage	24VDC
Block supply current	0.65A maximum
Current consumption	100mA 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.

Input block specifications

Applicable sensor	Current source type (PNP output) or Current sink type (NPN output)
Sensor connector	M8 connector (3-pin) or M12 connector (4-pin)
Number of inputs	2 inputs/8 inputs (M8 only)
Rated voltage	24VDC
Indication	Green LED
Insulation	None
Sensor supply current	Maximum 30mA/Sensor

Cables

How to Order Cable with M12 Connector

EX500 — AC **030** — **SSPS**

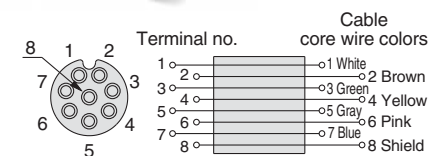


Cable length

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

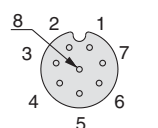
Connector specifications

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



Socket connector pin arrangement

Connections



Plug connector pin arrangement

How to Order Power Cable with Connector

EX500 — AP **050** — **S**

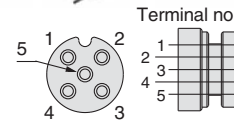


Cable length

010	1m
050	5m

Connector specifications

S	Straight
A	Angle



Socket connector pin arrangement

Connections

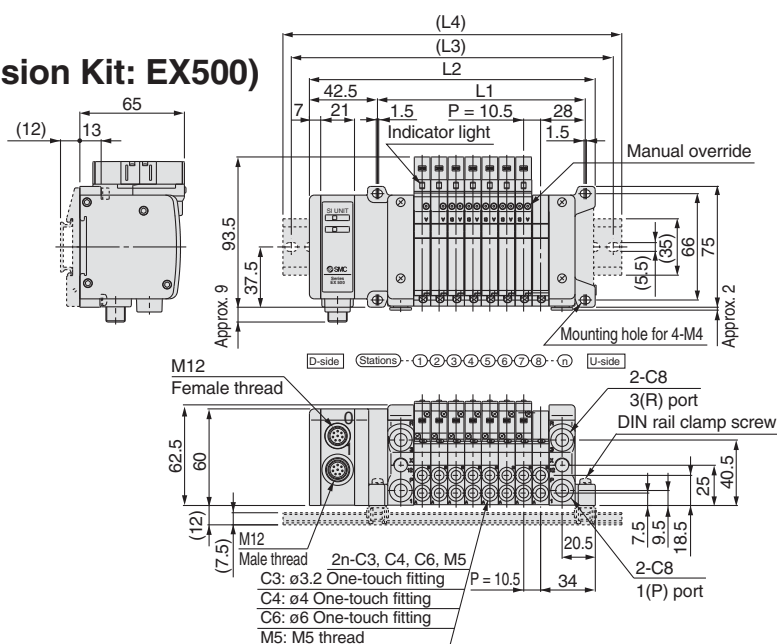
Cable core wire colors

Brown: 0V (solenoid valve power supply)
White: 24VDC +10%/-5% (solenoid valve power supply)
Blue: 0V (input and control power supply)
Black: 24VDC ±10% (input and control power supply)
Gray: PE

Base-Mounted Type

VV5QC11

S Kit (Serial Transmission Kit: EX500)



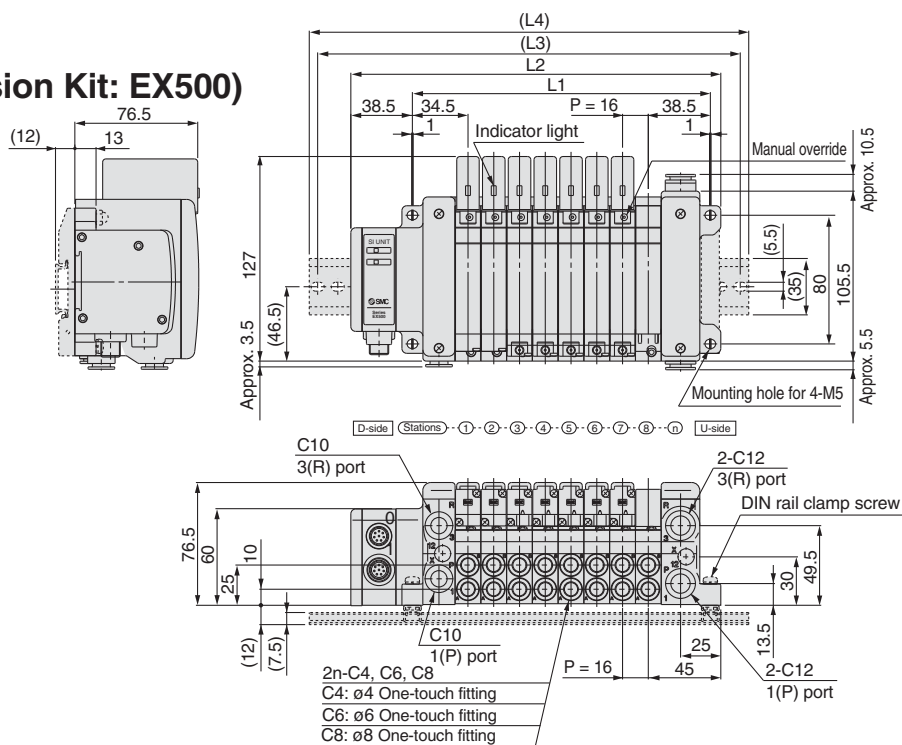
Formulas: $L1 = 10.5n + 45$, $L2 = 10.5n + 93.5$ n: Stations (maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213
L2	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5	230	240.5	251	261.5
L3	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5
L4	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298

VV5QC21

S Kit

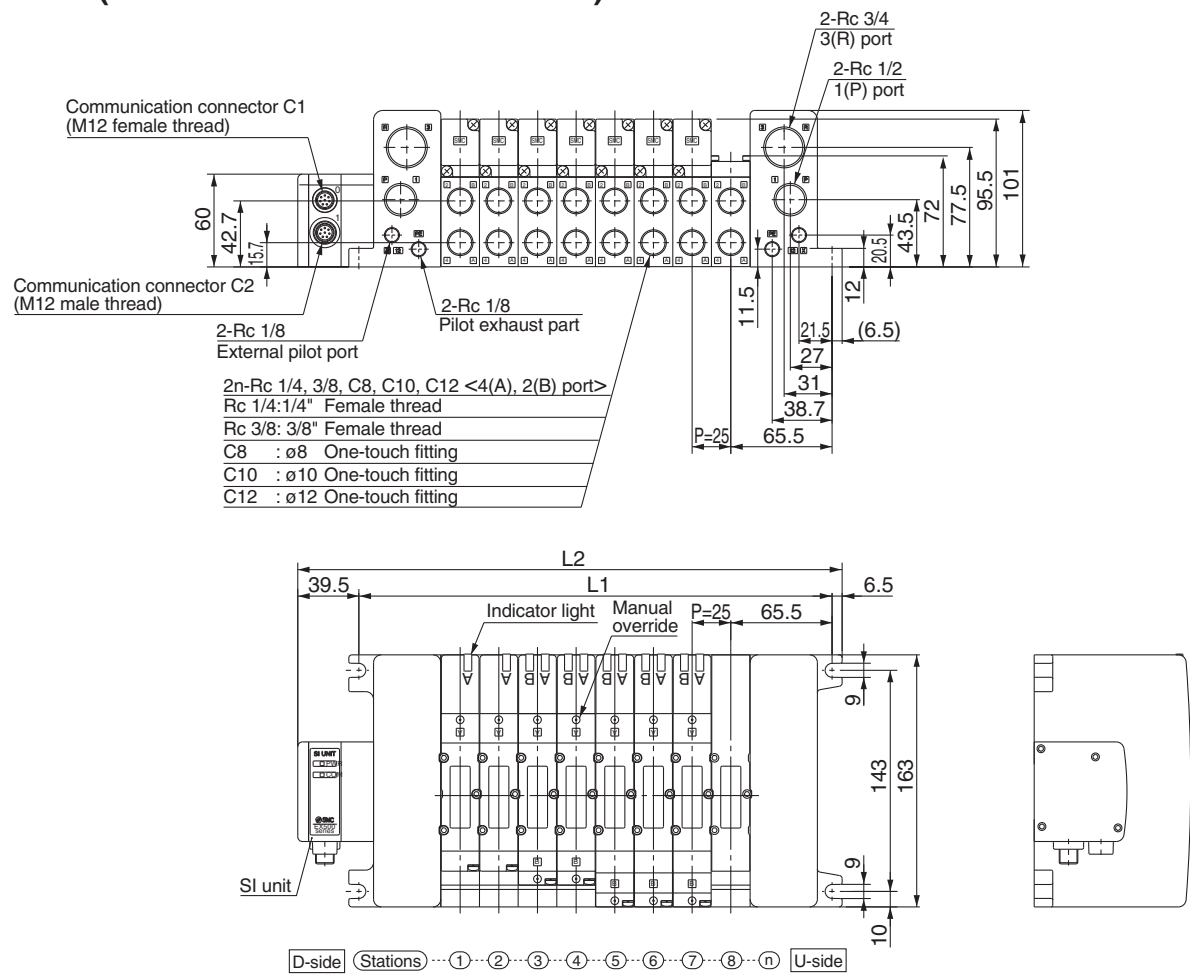
(Serial Transmission Kit: EX500)



Formulas: $L1 = 16n + 57$, $L2 = 16n + 102$ n: Stations (maximum 16 stations)

L \ n		Formulas: L1 = 70n + 57, L2 = 70n + 102 n. Stations (maximum 16 stations)															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1		73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313
L2		118	134	150	166	182	198	214	230	246	262	278	294	310	326	342	358
L3		137.5	150	175	187.5	200	212.5	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375
L4		148	160.5	185.5	198	210.5	223	248	260.5	273	298	310.5	323	348	360.5	373	385.5

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

Compatible network

DeviceNet, PROFIBUS-DP, CC-Link/As-i,
Controlnet, CANopen, Ethernet/IP

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

SI unit for DeviceNet, PROFIBUS-DP, CC-Link, As-i, Controlnet, CANopen, Ethernet/IP

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.

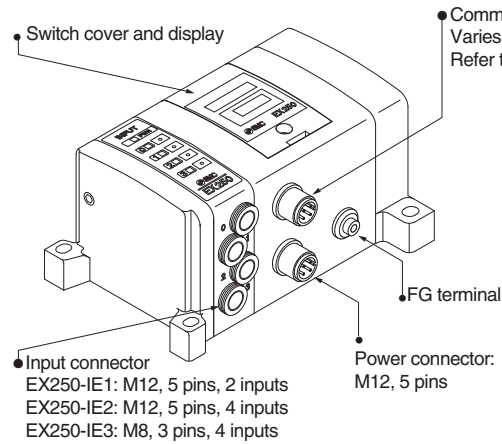
Furthermore, by connecting an input block, a maximum 32 sensor signal inputs are possible.

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.

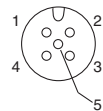
Furthermore, by connecting an input block, a maximum 4 or 8 sensor signal inputs are possible.

Connector Details



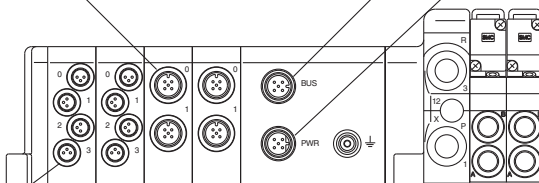
Circuit diagram Input module (EX250-IE*)

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.



Input connection: M8 ... 3 pins (Socket)

Example for cable side connection: Franz Binder GmbH Series 718, 768
Karl Lumberg GmbH: Series RSMV3

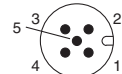


Pos.	Description	Function
1	SW+	Sensor power supply +
3	SW-	Sensor power supply -
4	SIGNAL	Sensor input signal

Communication connector

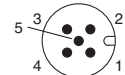
CANopen: Female connector cable: M12 female 5 pins cable with shield (according to ISO11898).

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.

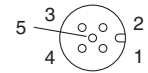
Pos.	Description	Function
1	Drain	Drain / shield
2	V+	Circuit power supply +
3	V-	Circuit power supply -
4	CAN_H	Signal H
5	CAN_L	Signal L



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



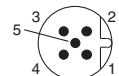
Power supply

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.

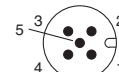
Pos.	Description	Function
1	SV24V	+24 V solenoid valve
2	SV0V	0V solenoid valve
3	SW24V	+24 V SI and input blocks
4	SW0V	0 V SI and input blocks
5	E	Ground connection



PROFIBUS-DP: M12...5 pins (Plug)

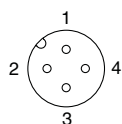
Example of the cable set with socket:
SMC: EX500-AP...S (See page 2-2-25.)

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



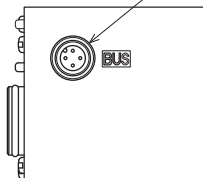
AS-i EX250-SAS7 / EX250-SAS9

Communication connector: M12 male 4 pins

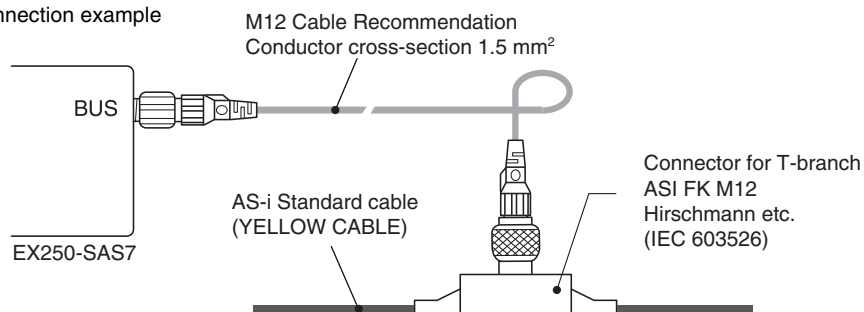


Pos.	Description	Function
1	AS-i +	Positive AS-Interface line
2	RESERVE	RESERVE
3	AS-i -	Negative AS-Interface line
4	RESERVE	RESERVE

Communication connector

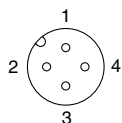


Connection example



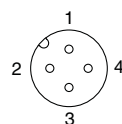
AS-i EX250-SAS3 / EX250-SAS5

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

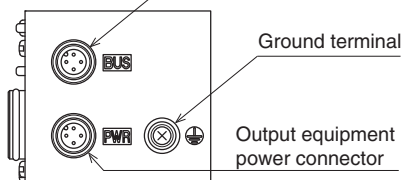
Output equipment power connector: M12 male 4 pins



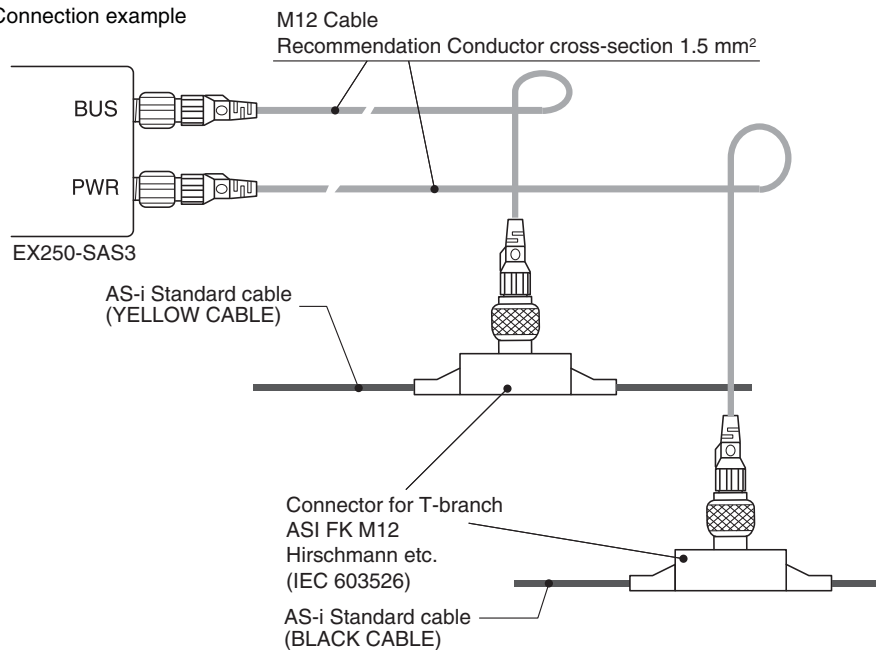
Pos.	Description	Function
1	24V	Positive output equipment power line
2	NC	Not connected
3	0V	Negative output equipment power line
4	NC	Not connected

* Connected inside the SI unit.

Communication connector



Connection example



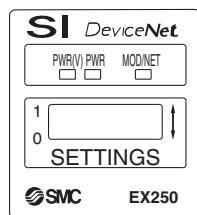
S VQC1000/2000/4000

Kit (Serial transmission kit) for I/O IP67 compliant

Indicator Unit (LED) Description and Its Function

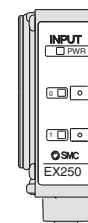
SI unit

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)

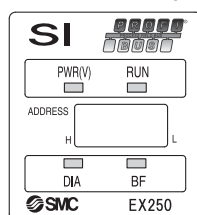


2-input type
(EX250-IE1)



4-input type
(EX250-IE2/3)

PROFIBUS-DP (EX250-SPR1)



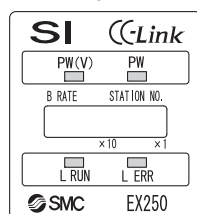
Name	Function
PWR(V)	GREEN ON when solenoid valve power supply is turned ON. GREEN OFF when the power supply voltage is less than 19 V.
RUN	GREEN ON when operating (SI unit power supply is ON).
DIA	RED ON when self diagnosis device detects abnormality.
BF	RED ON for BUS abnormality.

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.

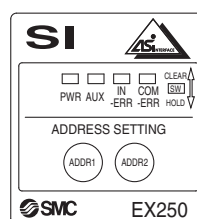
CC-Link (EX250-SMJ2)



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.

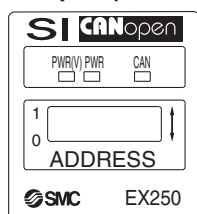
AS-i (EX250-SAS□)



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.)

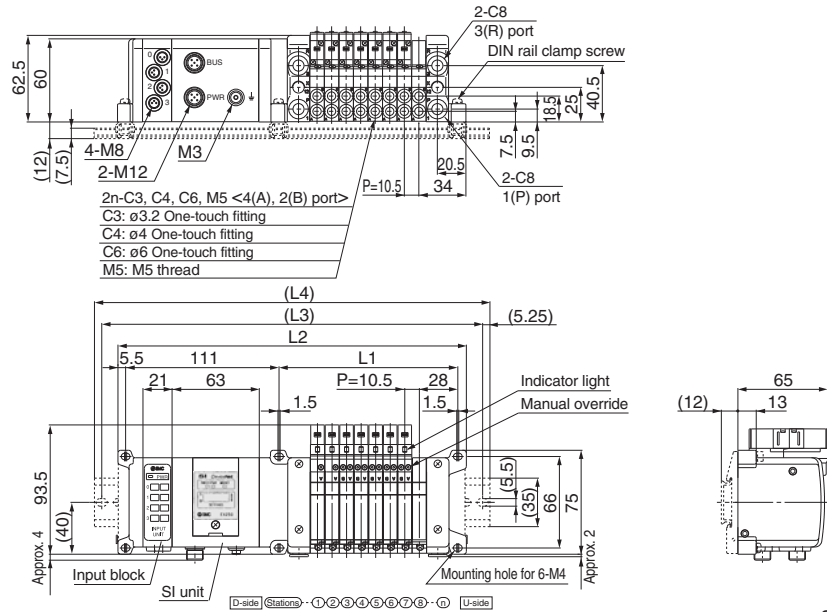
SI unit

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
CAN	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

VV5QC11 S Kit (Serial transmission kit: EX250)



Formulas

$L1 = 10.5n + 45$ (Maximum 24 single wiring stations)

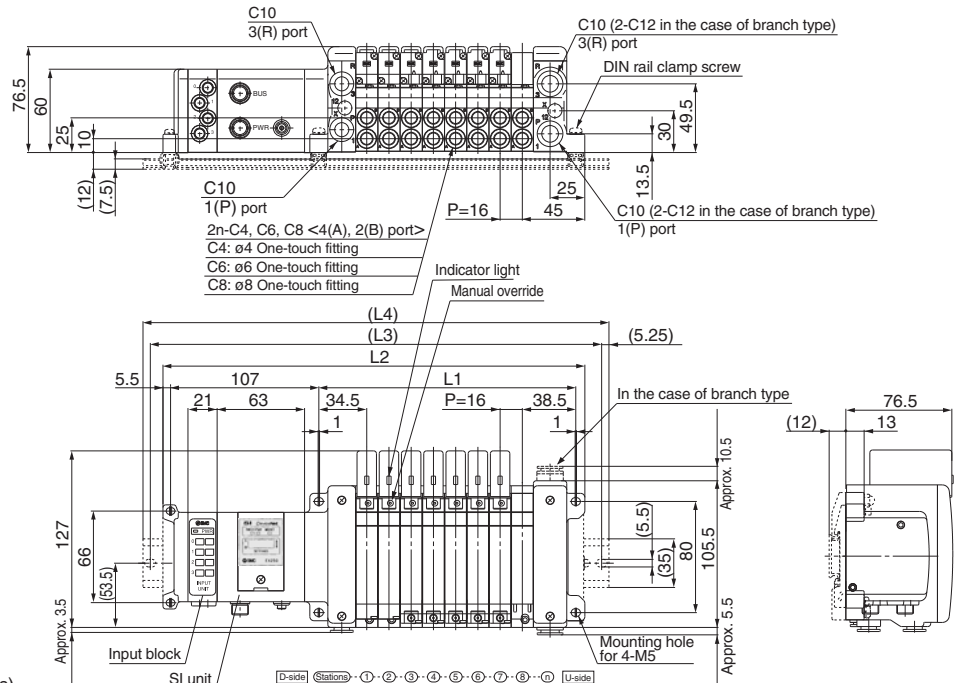
* $L2$: For one input block. Add 21 mm for each additional input block.

n: Stations

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2		178	188.5	199	209.5	220	230.5	241	251.5	262	272.5	283	293.5	304	314.5	325	335.5	346	356.5	367	377.5	388	398.5	409	419.5
L3		200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5	375	387.5	387.5	400	412.5	425	437.5	450
L4		210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.2	323	335.5	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5	448	448

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

VV5QC21 S Kit (Serial transmission kit: EX250)



Formulas

$L1 = 16n + 57$ (Maximum 24 single wiring stations)

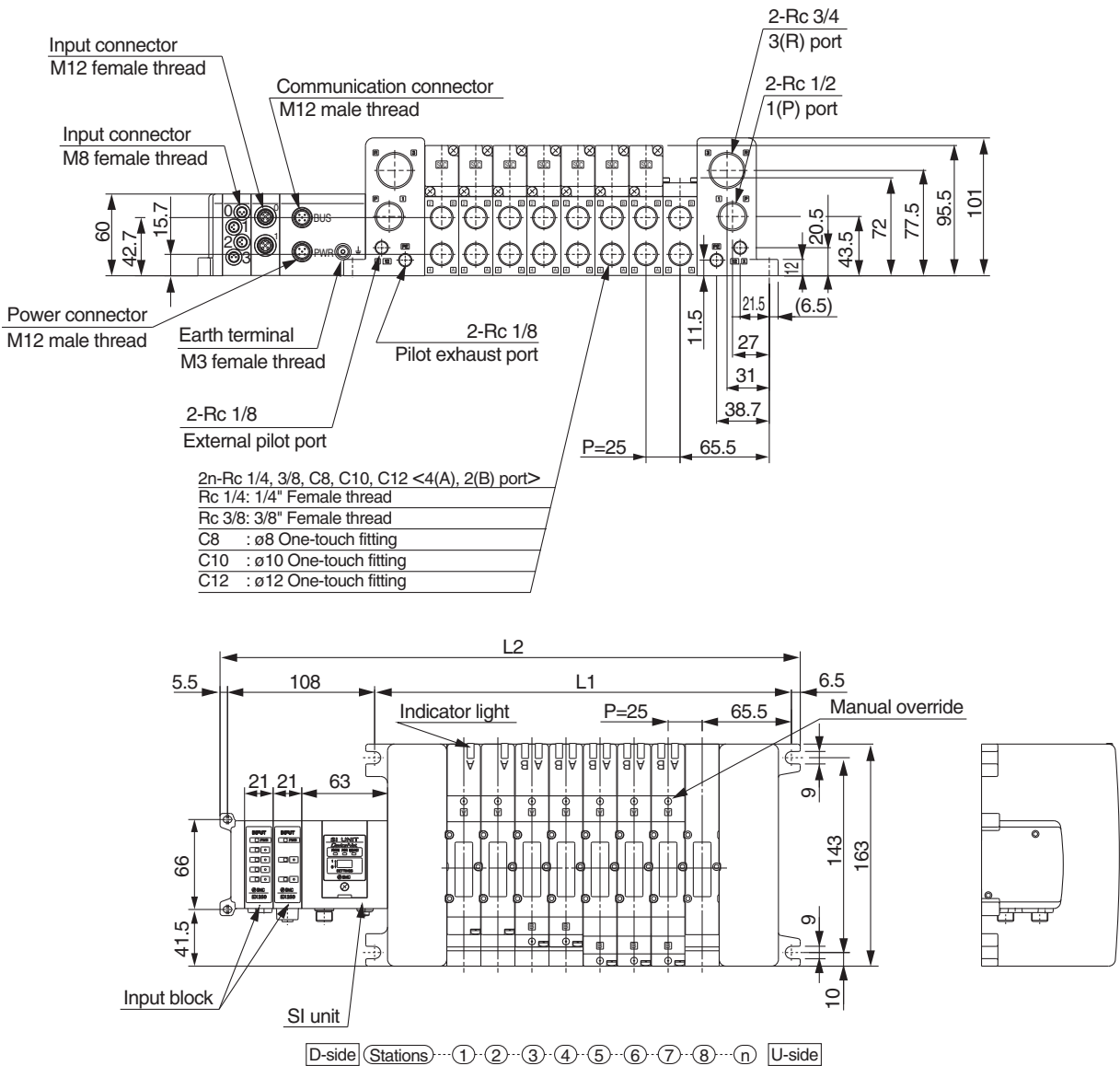
* $L2$: For one input block. Add 21 mm for each additional input block.

n: Stations

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441
L2		192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464	480	496	512	528	544	560
L3		212.5	237.5	250	262.5	275	287.5	312.5	325	337.5	362.5	375	387.5	400	425	437.5	450	462.5	487.5	500	512.5	537.5	550	562.5	587.5
L4		223	248	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	598

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

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.

(mm)		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

S VQC4000

Kit (Serial Transmission Kit) for I/O Conforms to IP67

Compatible network DeviceNet/PROFIBUS-DP

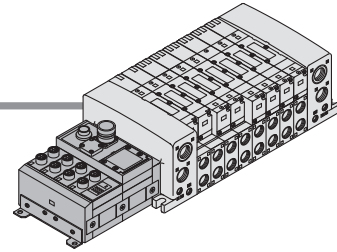
• The serial transmission system greatly reduces connection work, minimizes wiring, and saves space.

DeviceNet/PROFIBUS compatible SI unit

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

Furthermore, by connecting a maximum of 4 input blocks, up to 32 sensor signal inputs are possible.

Connector Details

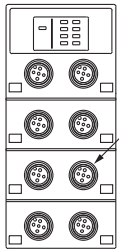


Input block

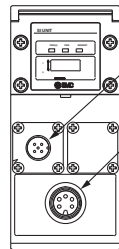
This expansion block connects to the SI unit and allows for sensor input to the auto switches.

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.

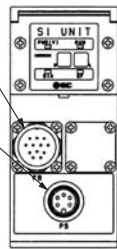
Input block



SI unit (DeviceNet)



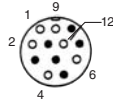
SI unit (PROFIBUS-DP)



Communication connector (PROFIBUS-DP):

CONINVERS® RC-2RS1N12, 12 pins

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



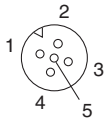
No.	Description	Function
1	M5V	GND Terminal
2	A	Signal -N
4	B	Signal -P
6	+5V	Terminal +5V
9	SHIELD	Shield ground
12	RTS	Optical fiber (reserve)

• 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.

Connector: Input no. 0, 2, 4, 6	Input no. 1, 3, 5, 7
SW +	1
SIGNAL -n + 1	2
SW -	3
SIGNAL -n	4
PE	5

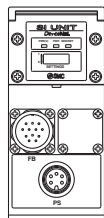
Caution

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

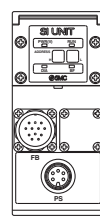
Indicator Unit (LED) Descriptions and Functions

SI unit (DeviceNet)



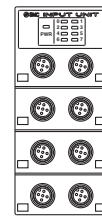
Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON.
PWR	ON when DeviceNet circuit power supply input is turned ON.
MOD/NET	OFF: Power supply off, off line, or when checking duplication of MAC_ID.
	GREEN BLINKING: Waiting for connection (on line).
	GREEN ON: Connection established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

SI unit (PROFIBUS-DP)



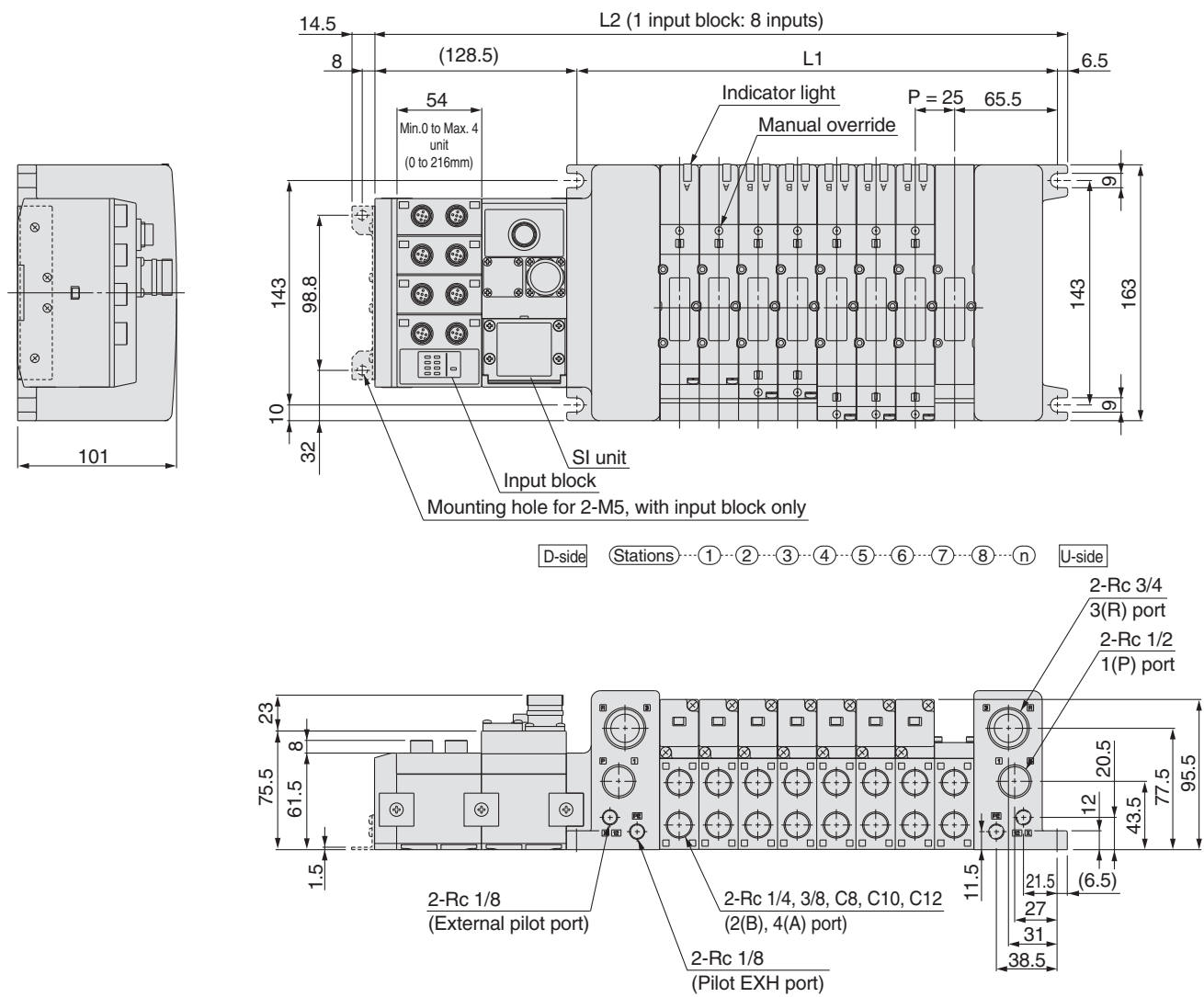
Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON.
PWR	OFF when the power supply voltage is less than 19V.
RUN	ON when operating (SI unit power supply is ON).
DIA	ON when self diagnosis device detects abnormality.
BF	ON for BUS abnormality.

Input block



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)



(mm)

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

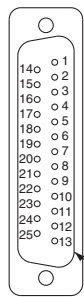
F VQC1000/2000/4000

Kit (D-sub Connector Kit) Conforms to IP40

- Using our D-sub connector for electrical connections greatly reduces labor, while it also minimizes wiring and saves space.
- We use a D-sub connector (25P) that conforms to MIL standards and is 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

D-sub connector



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.

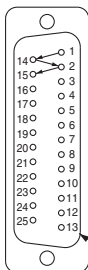
Lead wire colors for D-sub connector assemblies (AXT100-DS25-015, 030, 050)

		Terminal no.	Polarity		Lead wire color	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	(-)	(+)	Gray	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	(-)	(+)	Gray	Black
		SOL. B	22	(-)	(+)	Pink	Red
Station 10	{	SOL. A	10	(-)	(+)	White	Black
		SOL. B	23	(-)	(+)	Gray	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	(+)	(-)	Orange	Red
				Positive COM spec.	Negative COM spec.	Note)	

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

Special wiring specifications (options)

(For 25P)

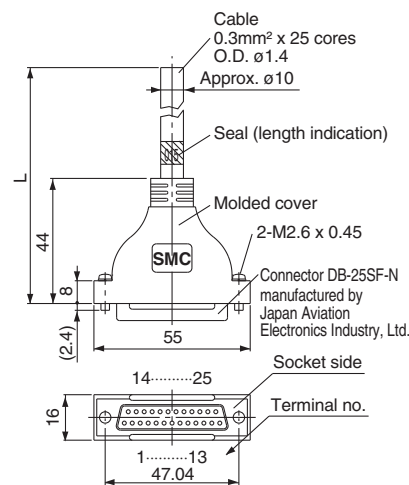


Mixed single and double wiring are available as options. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

Cable assembly

AXT100-DS25-015, 030, 050

(D-sub connector cable assemblies can be ordered with manifolds. Refer to manifold ordering.)



D-sub connector cable assemblies (optional)

Cable length (L)	Part no.	Note
1.5m	AXT100-DS25-015	Cable 0.3mm² x 25 cores
3m	AXT100-DS25-030	
5m	AXT100-DS25-050	

* When using a standard commercial connector, use a type 25P female connector conforming to MIL-C-24308.

* Cannot be used for transfer wiring.

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) The minimum bending radius for D-sub connector cables is 20mm.

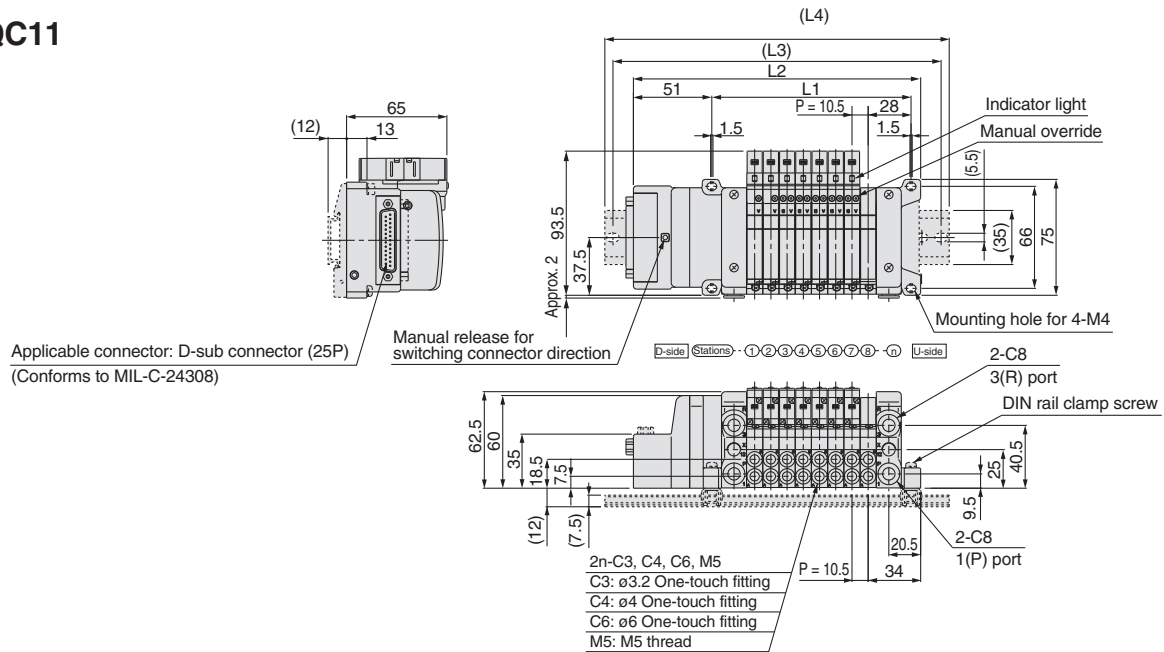
Lead wire colors for D-sub connector cable assembly terminal numbers

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

Some connector manufacturers:

- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

VV5QC11

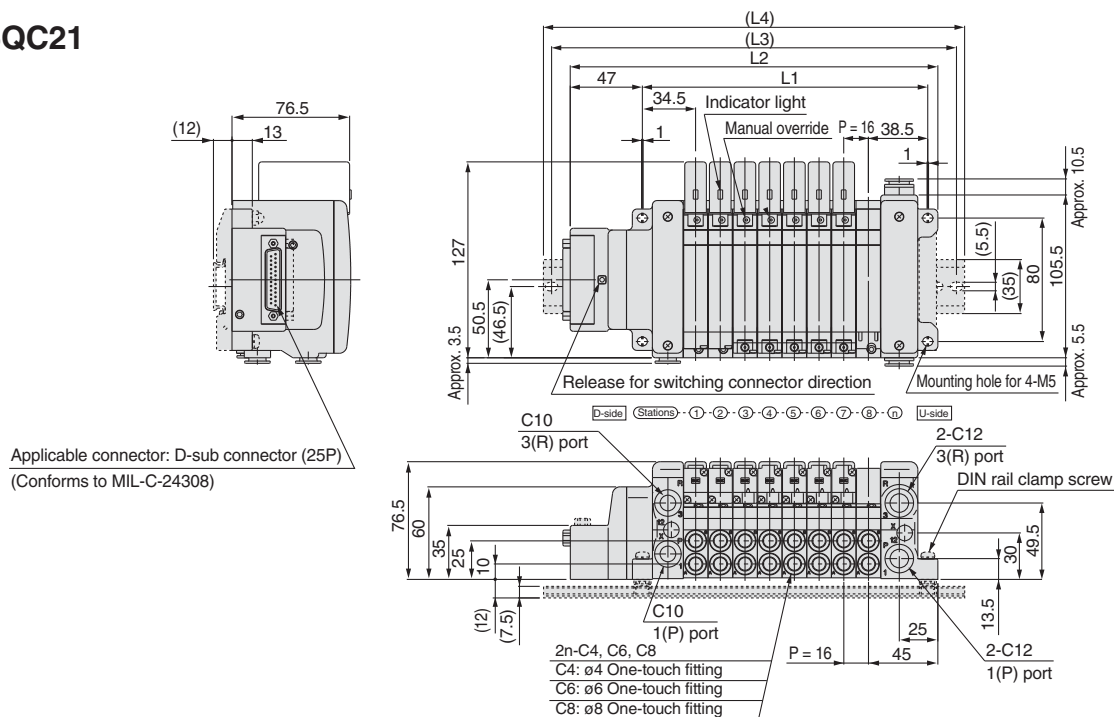


(mm)

Formulas: $L1 = 10.5n + 45$, $L2 = 10.5n + 102$ n: Stations (maximum 24 stations)

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2		112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5	228	238.5	249	259.5	270	280.5	291	301.5	312	322.5	333	343.5	354
L3		137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	300	312.5	325	337.5	350	362.5	375	375	375	375
L4		148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	385.5	385.5

VV5QC21

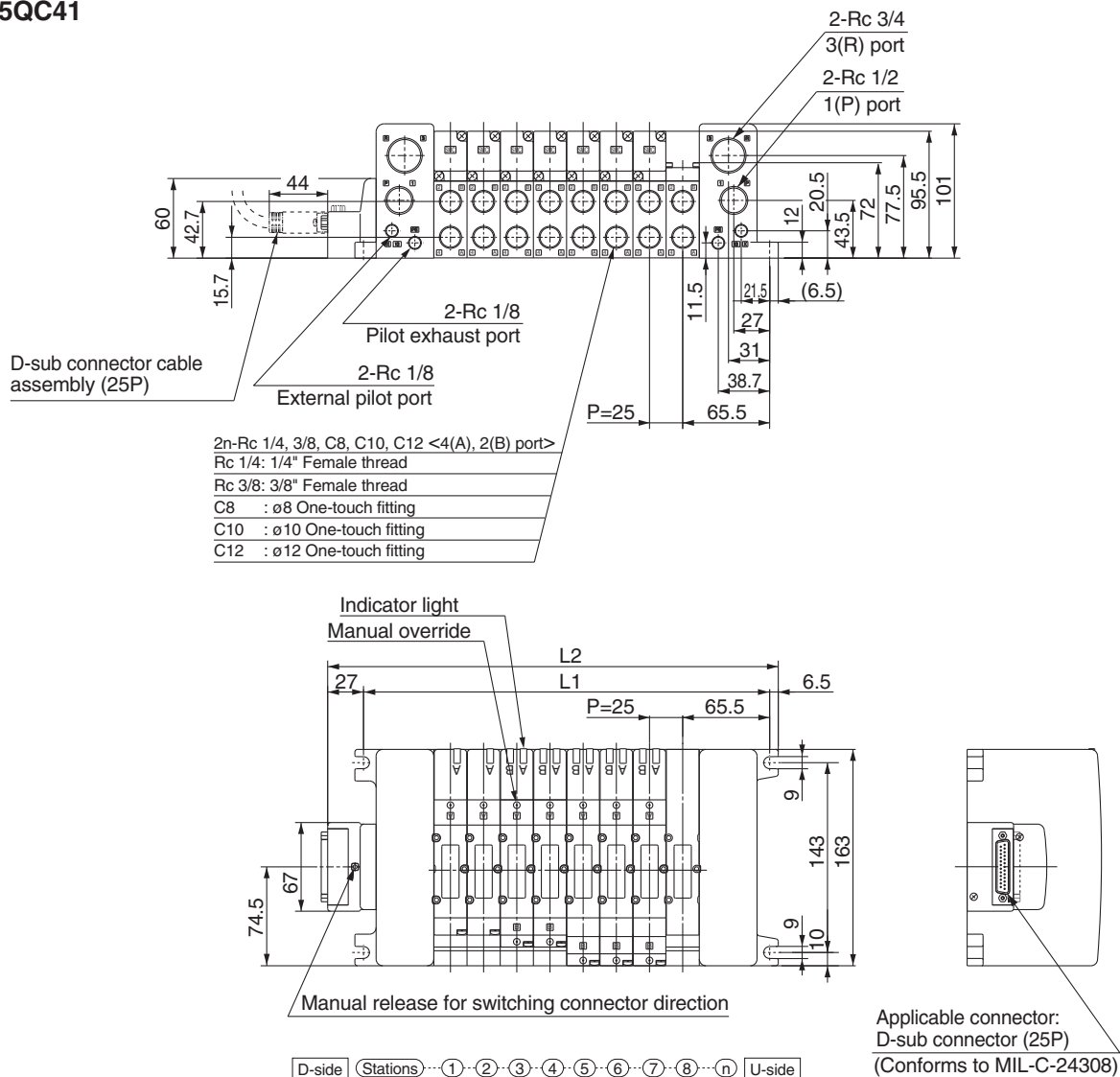


(mm)

Formulas: $L1 = 16n + 57$, $L2 = 16n + 110.5$ n: Stations (maximum 24 stations)

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441
L2		126.5	142.5	158.5	174.5	190.5	206.5	222.5	238.5	254.5	270.5	286.5	302.5	318.5	334.5	350.5	366.5	382.5	398.5	414.5	430.5	446.5	462.5	478.5	494.5
L3		150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425	437.5	450	475	487.5	500	525
L4		160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	460.5	485.5	498	510.5	535.5

VV5QC41

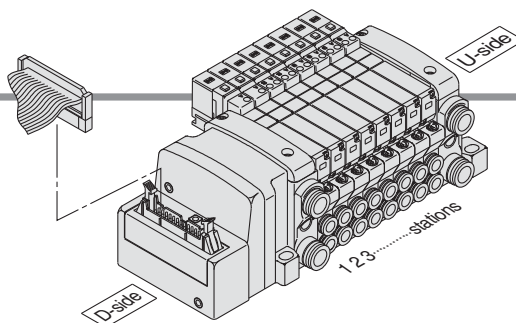


P

VQC1000/2000/4000

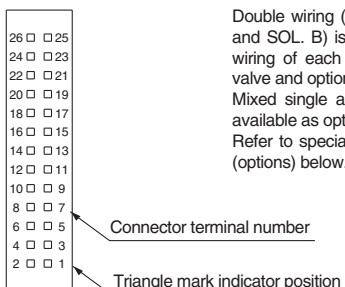
Kit (Flat Ribbon Cable Kit) **Conforms to IP40**

- Using our flat ribbon cable for electrical connections greatly reduces labor, 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.

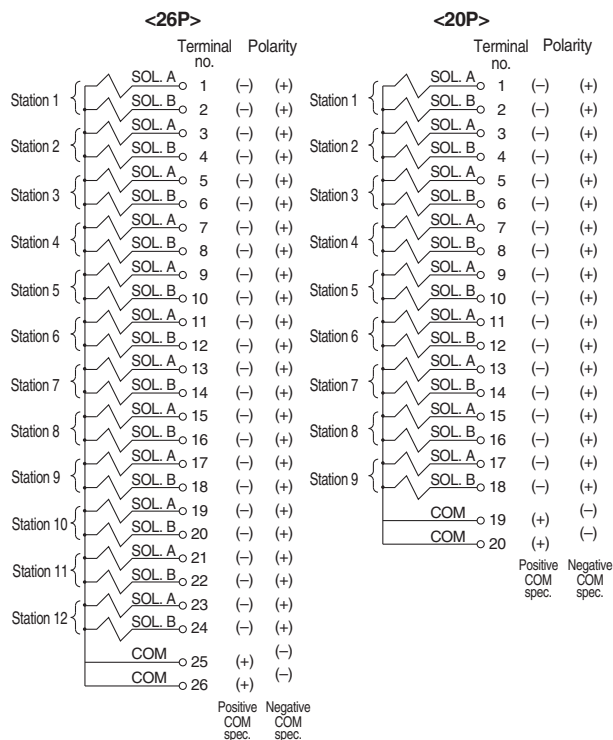


Electrical wiring specifications

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.

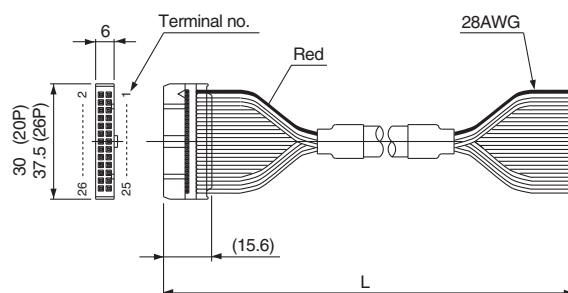


Note) When using the negative COM specification, use valves for negative COM.

Cable assembly

AXT100-FC ²⁰/₂₆ ¹/₂/₃

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



Flat ribbon cable connector assemblies (optional)

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

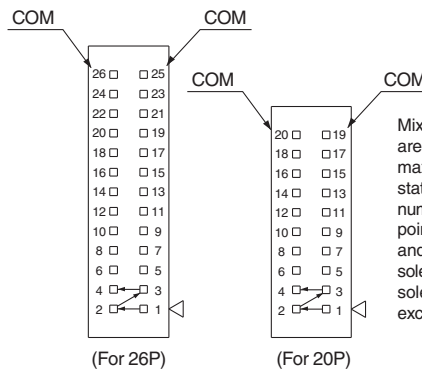
* When using a standard commercial connector, use a type 26P connector conforming to MIL-C-83503 or a type 20P with strain relief.

* Cannot be used for transfer wiring.

Some connector manufacturers:

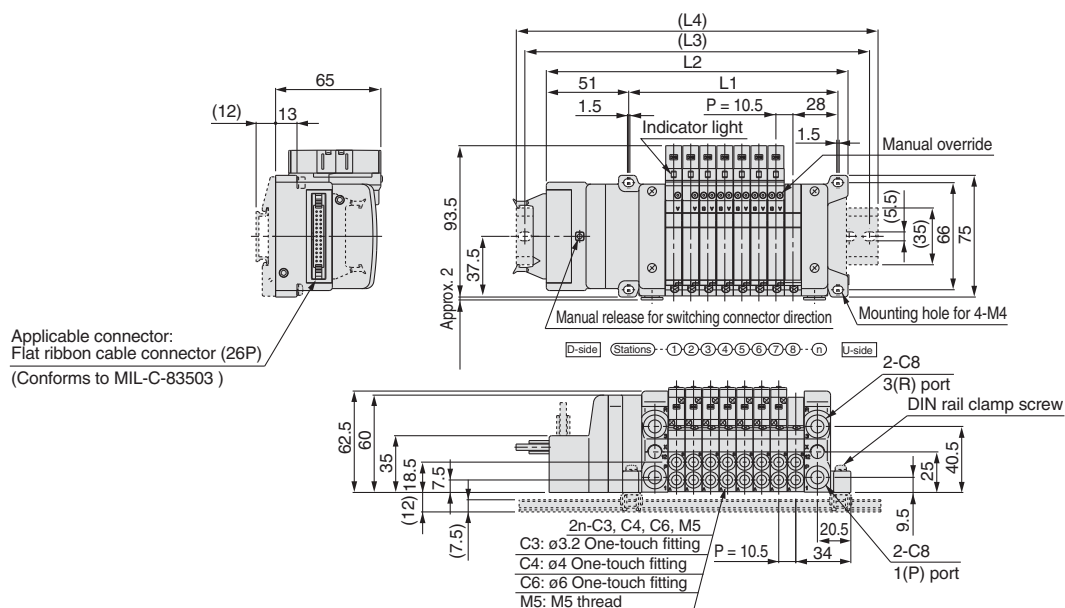
- HIROSE ELECTRIC CO., LTD.
- Sumitomo/3-M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

Special wiring specifications (options)



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.

VV5QC11

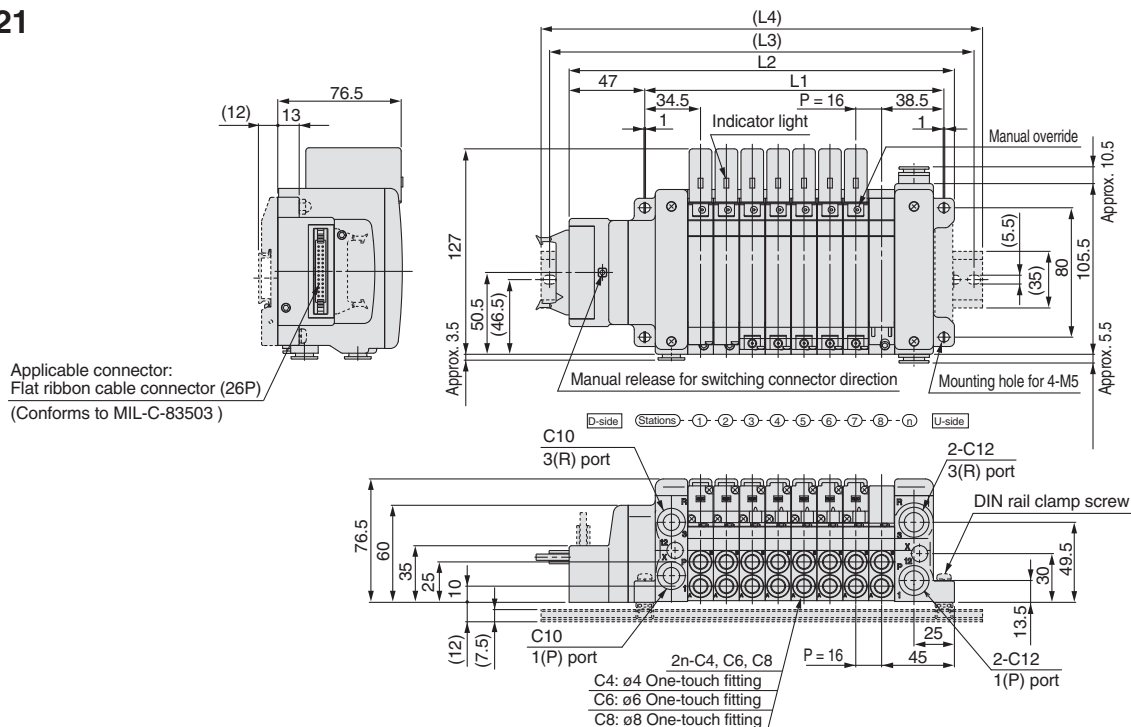


(mm)

Formulas: $L1 = 10.5n + 45$, $L2 = 10.5n + 102$ n: Stations (maximum 24 stations)

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2		112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5	228	238.5	249	259.5	270	280.5	291	301.5	312	322.5	333	343.5	354
L3		137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5	325	337.5	350	362.5	373	375
L4		148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	385.5	385.5

VV5QC21

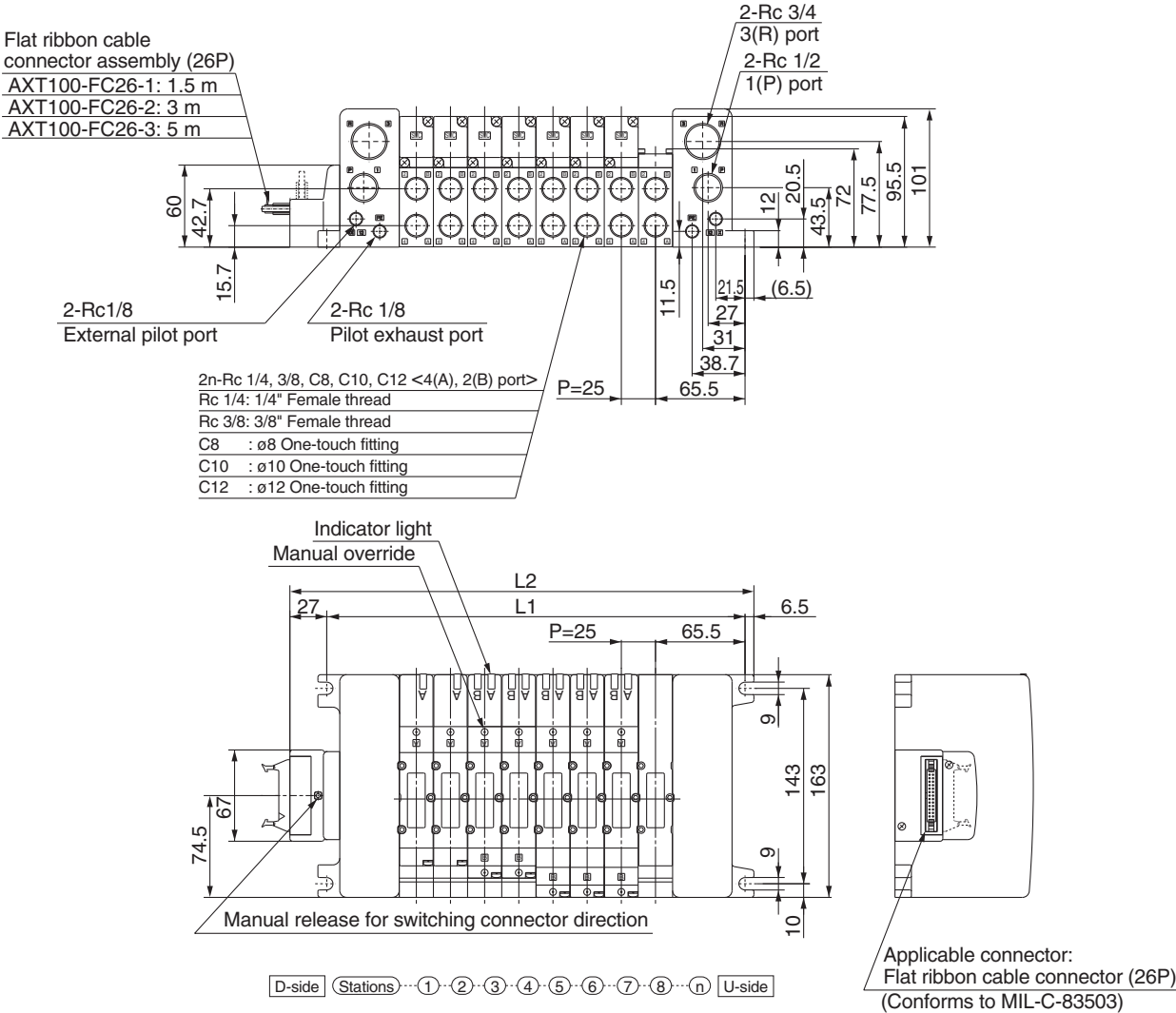


(mm)

Formulas: $L1 = 16n + 57$, $L2 = 16n + 110.5$ n: Stations (maximum 24 stations)

L \ n		n																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L	L1	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441
	L2	126.5	142.5	158.5	174.5	190.5	206.5	222.5	238.5	254.5	270.5	286.5	302.5	318.5	334.5	350.5	366.5	382.5	398.5	414.5	430.5	446.5	462.5	478.5	494.5
	L3	150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425	437.5	450	475	487.5	500	525
	L4	160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	460.5	485.5	498	510.5	535.5

VV5QC41



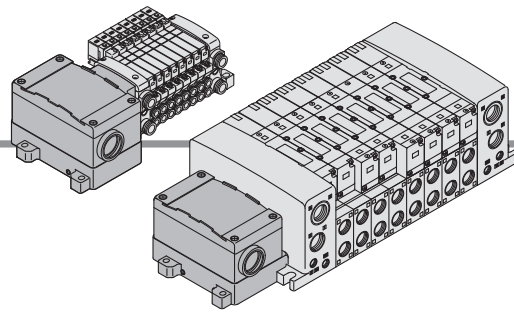
Formulas
L1 = 25n + 106 (Maximum 16 single wiring stations)
L2 = 25n + 139.5

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

T VQC1000/2000/4000

Kit (Terminal Block Box Kit) **Conforms to IP67**

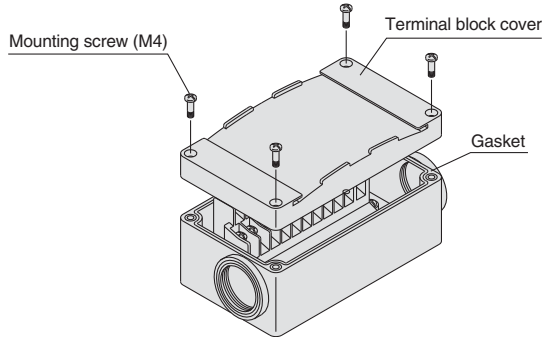


- This kit has a small terminal block inside a junction box. The provision of a G3/4 electrical entry allows connection of conduit fittings.

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

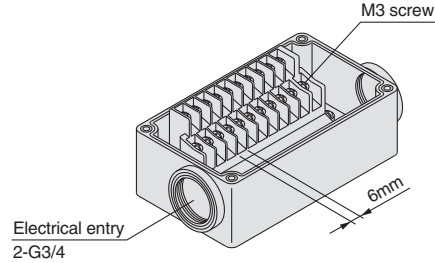
Securely tighten the screws to the torque shown in the table below, after confirming that the gasket is installed correctly.

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.

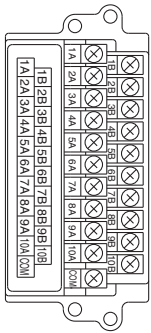
Connect each wire to the power supply side, according to the markings provided inside the terminal block.



- 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)

Standard wiring



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) There is no polarity. This device can also be used as a negative common.

	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 Negative COM COM

Special wiring specifications (options)

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.

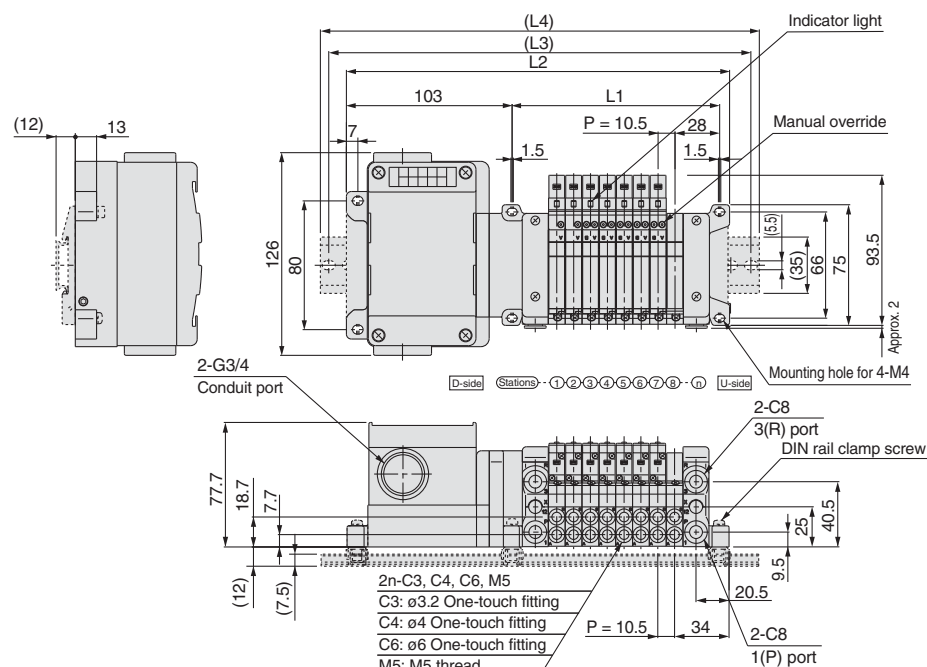
1. How to order

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.



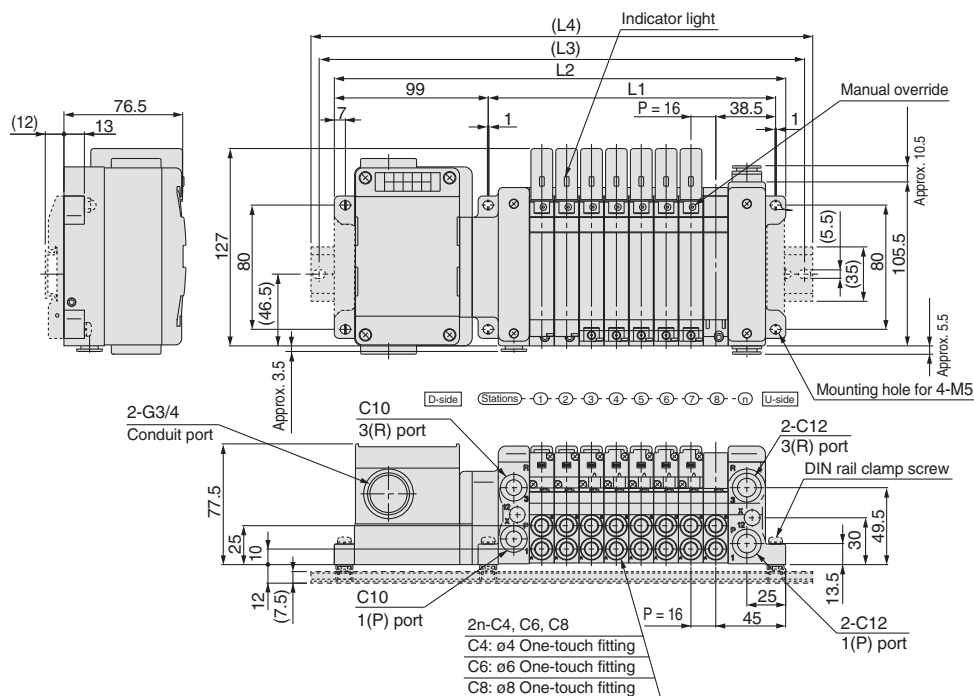
VV5QC11

(mm)

Formulas: $L1 = 10.5n + 45$, $L2 = 10.5n + 154.5$ n : Stations (maximum 20 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255
L2	165	175.5	186	196.5	207	217.5	228	238.5	249	259.5	270	280.5	291	301.5	312	322.5	333	343.5	354	364.5
L3	187.5	200	212.5	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	337.5	350	362.5	375	387.5	
L4	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398

VV5QC21



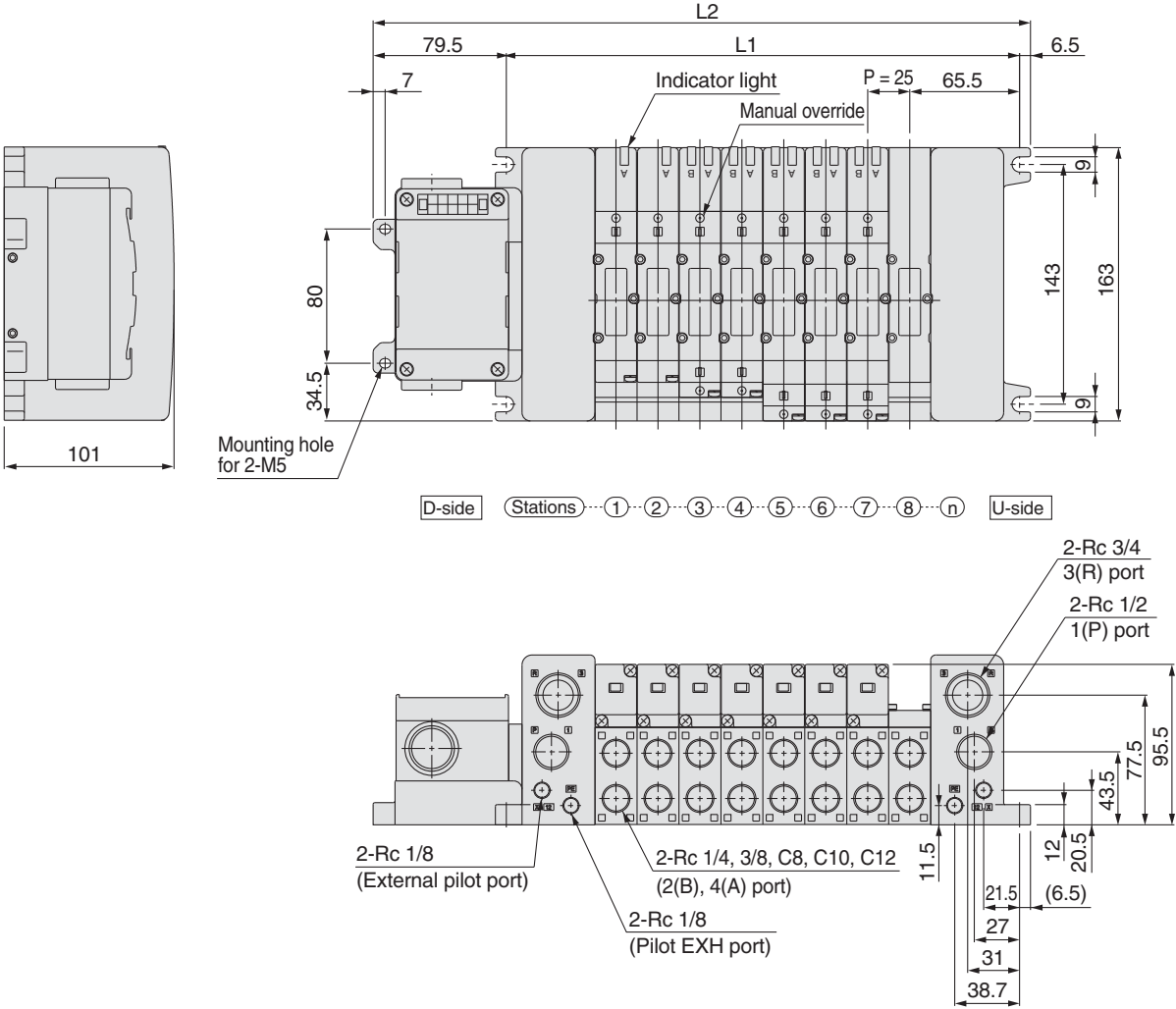
(mm)

Formulas: $L1 = 16n + 57$, $L2 = 16n + 163$ n: Stations (maximum 20 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

VV5QC41

1in = 25.4mm



(mm)

Formulas: $L1 = 25n + 106$, $L2 = 25n + 192$ n: Stations (maximum 20 stations)

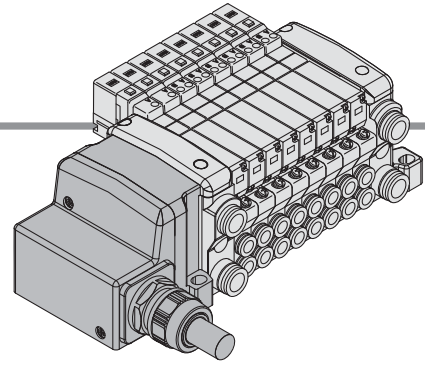
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506	531	556	581	606
L2	217	242	267	292	317	342	367	392	417	442	467	492	517	542	567	592	617	642	667	692



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.

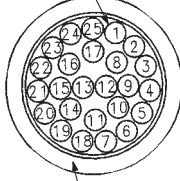


Electrical Wiring Specifications

Lead wire specifications

Lead wire

0.3 mm² × 25 core



Sheath

Colour: Urban white

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.

		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	(+)	(-)	Orange	Red
			Positive COM. spec.	Negative COM. spec.	Note)	



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

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

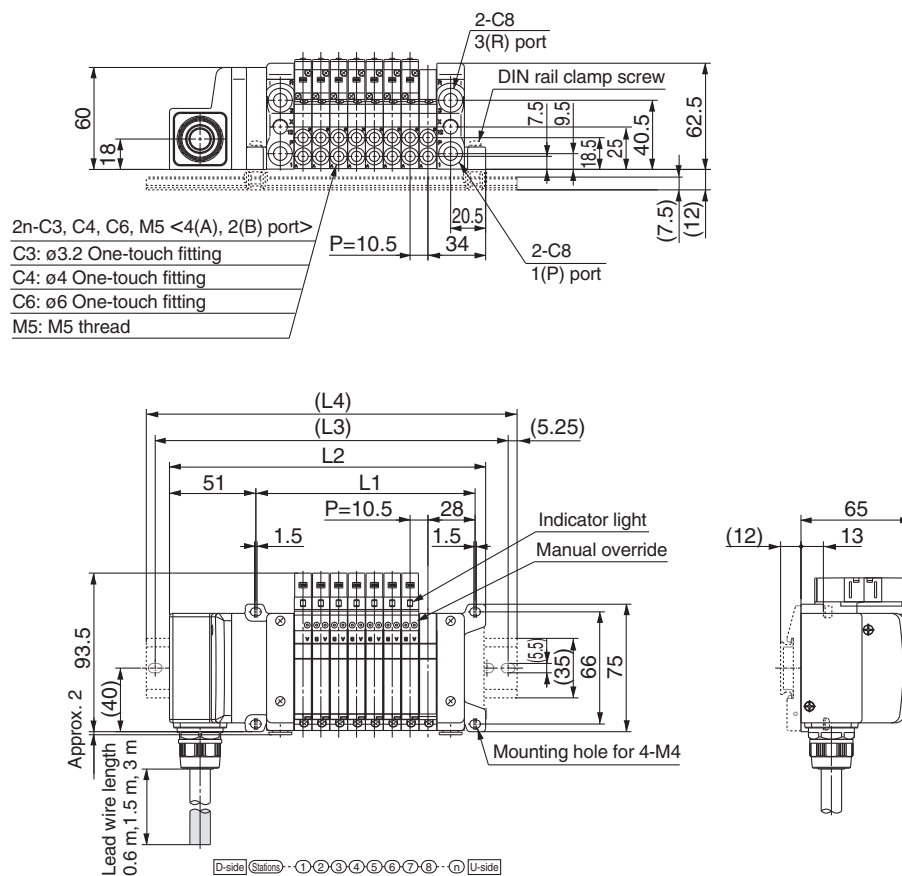


Note) Cannot be used for transfer wiring.
The minimum bending radius for cables is 20 mm.

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.

VV5QC11



Formulas

$$L1 = 10.5n + 45 \text{ (Maximum 24 single wiring stations)}$$

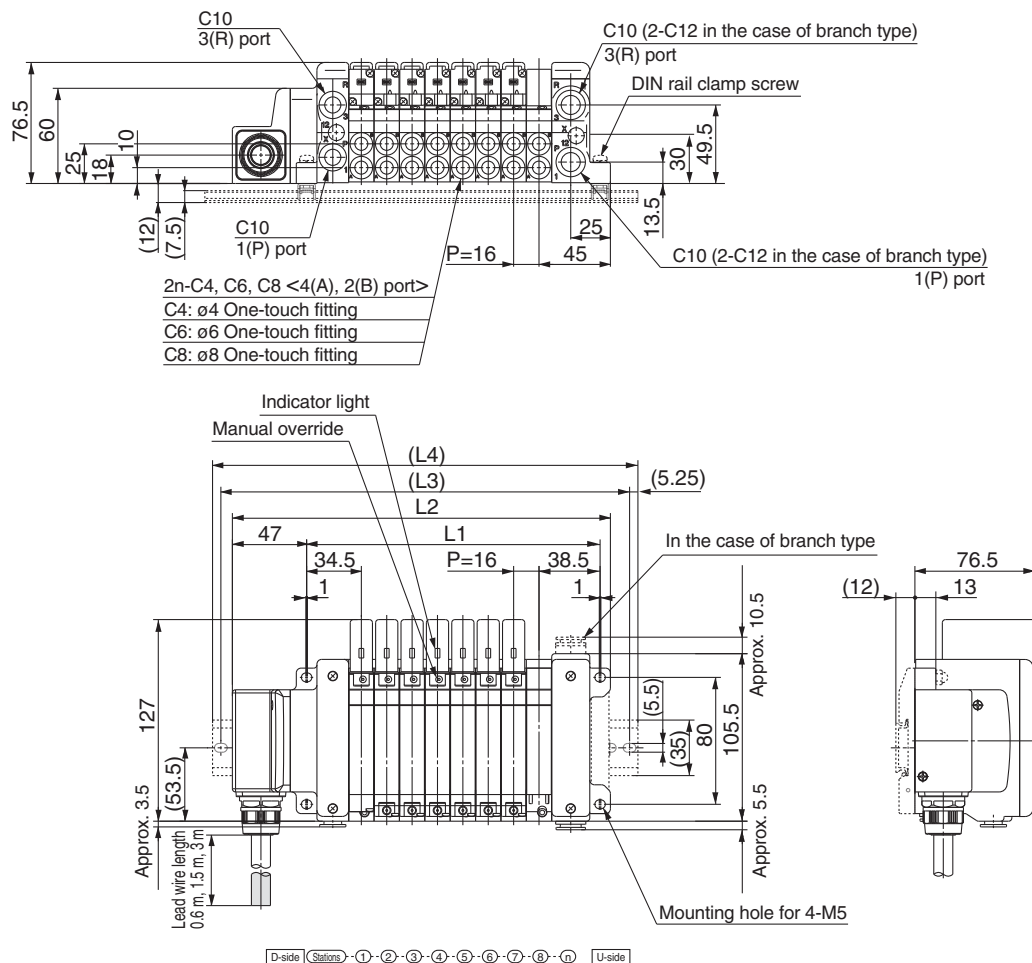
$$L2 = 10.5n + 102$$

n: Stations

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2		112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5	228	238.5	249	259.5	270	280.5	291	301.5	312	322.5	333	343.5	354
L3		137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400	412.5	425
L4		148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5	348	360.5	373	385.5	398	410.5	423	435.5

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

VV5QC21



Formulas

L1 = 16n + 57 (Maximum 24 single wiring stations)

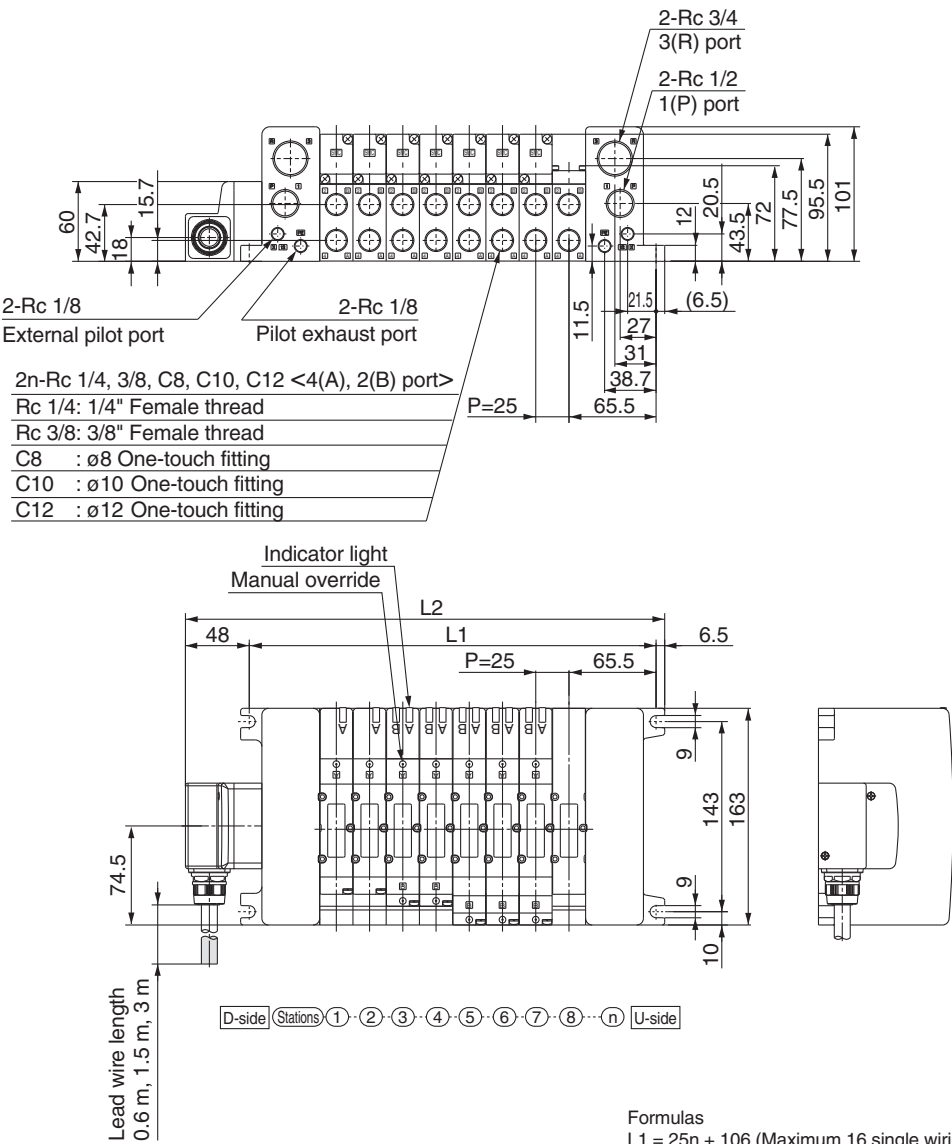
L2 = 16n + 110.5

n: Stations

L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441
L2		126.5	142.5	158.5	174.5	190.5	206.5	222.5	238.5	254.5	270.5	286.5	302.5	318.5	334.5	350.5	366.5	382.5	398.5	414.5	430.5	446.5	462.5	478.5	494.5
L3		150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425	437.5	450	475	487.5	500	525
L4		160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	460.5	485.5	498	510.5	535.5

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

VV5QC41



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

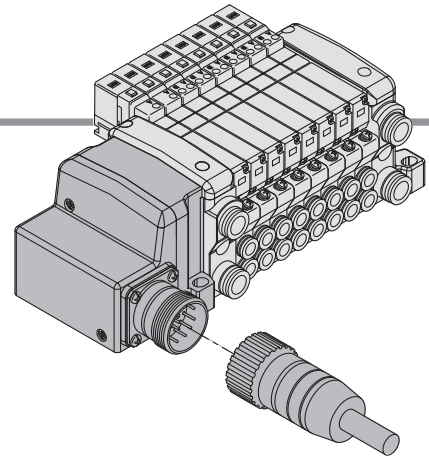
n		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1		131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2		185.5	210.5	235.5	260.5	285.5	310.5	335.5	360.5	385.5	410.5	435.5	460.5	485.5	510.5	535.5	560.5

M

VQC1000/2000/4000

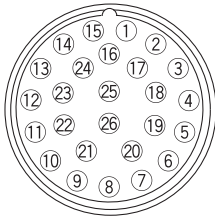
Kit (Multiple connector kit) IP67 compliant

- Use of multiple connectors helps streamline wiring procedure to save labor.
- IP67 enclosure is available with use of waterproof multiple connectors.



Electrical Wiring Specifications

Multiple 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.

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

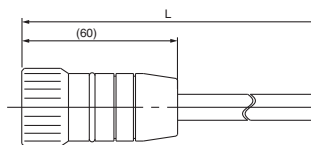
Special Wiring Specifications (Option)

Mixed single and double wiring are available as an option. 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.

Cable Assembly

■ Circular connector cable assembly (26 pins)

GAXT100– MC26 – □



Port cable length

Part no.	L dimension
GAXT100-MC26-015	1.5 m
GAXT100-MC26-030	3 m
GAXT100-MC26-050	5 m

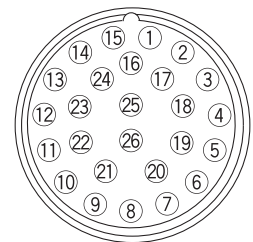
Lead wire colors according to pin numbers

The color code is according to DIN47100.

Pin no.	Cable color	Identification
1	white	—
2	brown	—
3	green	—
4	yellow	—
5	grey	—
6	pink	—
7	blue	—
8	red	—
9	black	—
10	violet	—
11	grey	pink
12	red	blue
13	white	green
14	brown	green
15	white	yellow
16	yellow	brown
17	white	grey
18	grey	brown
19	white	pink
20	pink	brown
21	white	blue
22	brown	blue
23	white	red
24	brown	red
25	white	black
26 *	bridged to pin 25	

* only for circular connectors

Connector pin number
(Arrangement as seen from the cable's port side)



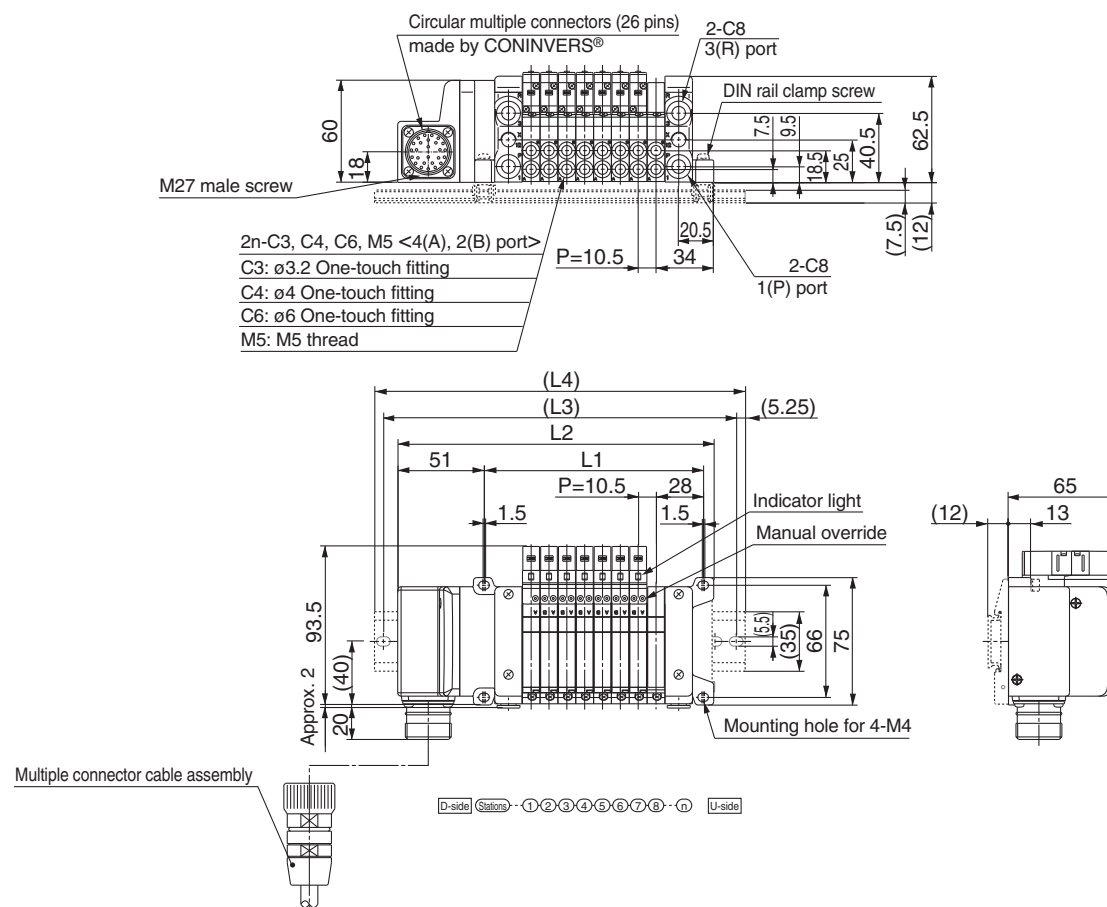
Electrical characteristics

Item	Characteristics
Conductor resistance Ω/km , 20°C	57 or less
Electric strength V, 5min, AC	1500
Insulation resistance $M\Omega/\text{km}$	20

(See also AXT100-MC26-⁰¹⁵₀₃₀⁰⁵⁰
which conforms to colour code MIL-C24308)

* For detailed specifications and handling, please contact SMC.

VV5QC11



Formulas

$L1 = 10.5n + 45$ (Maximum 24 single wiring stations)

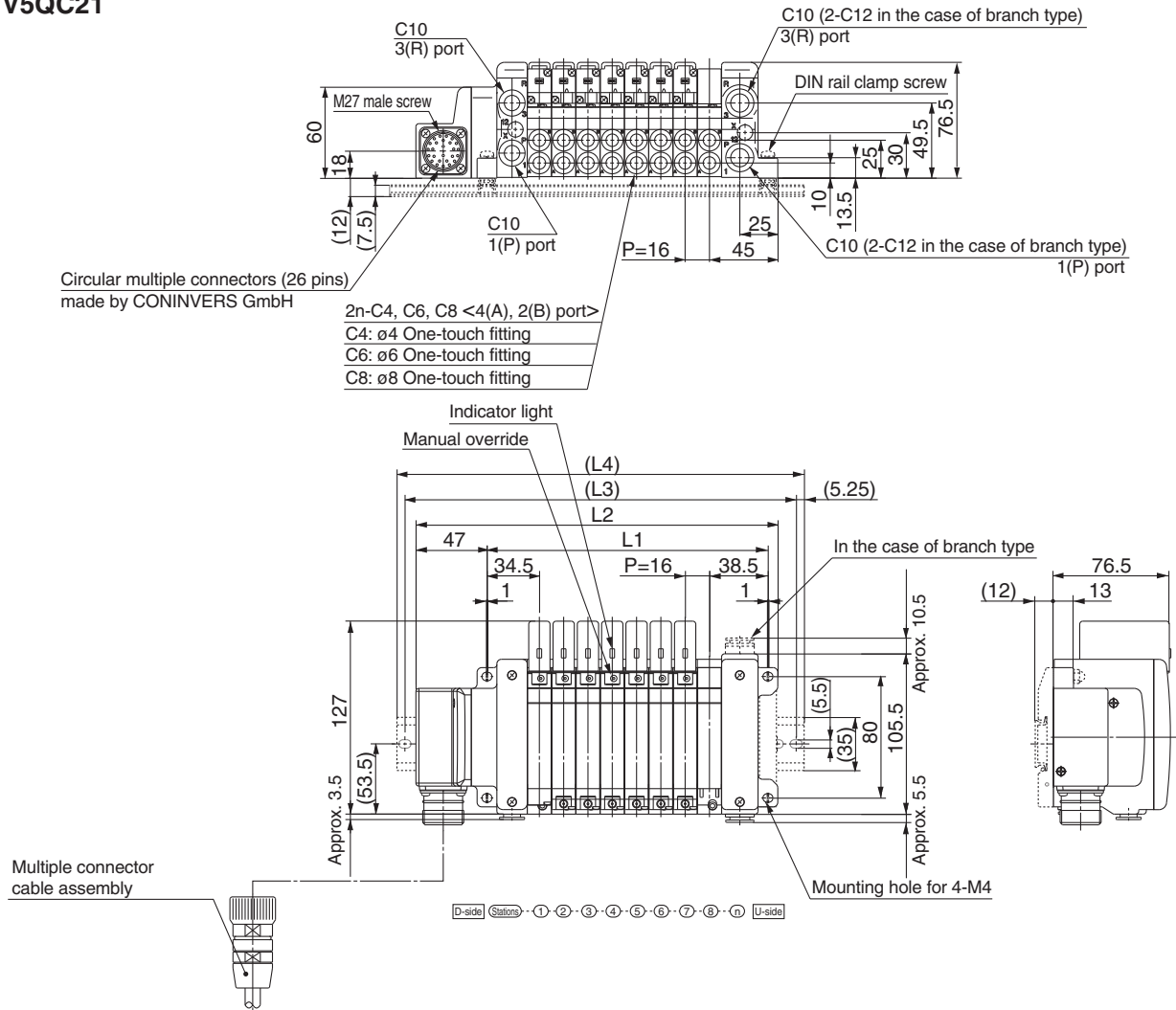
$L2 = 10.5n + 102$

n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2	112.5	123	133.5	144	154.5	165	175.5	186	196.5	207	217.5	228	238.5	249	259.5	270	280.5	291	301.5	312	322.5	333	343.5	354
L3	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5	325	337.5	350	362.5	375	375
L4	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	385.5	385.5

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

VV5QC21



Formulas

$$L1 = 16n + 57 \text{ (Maximum 24 single wiring stations)}$$

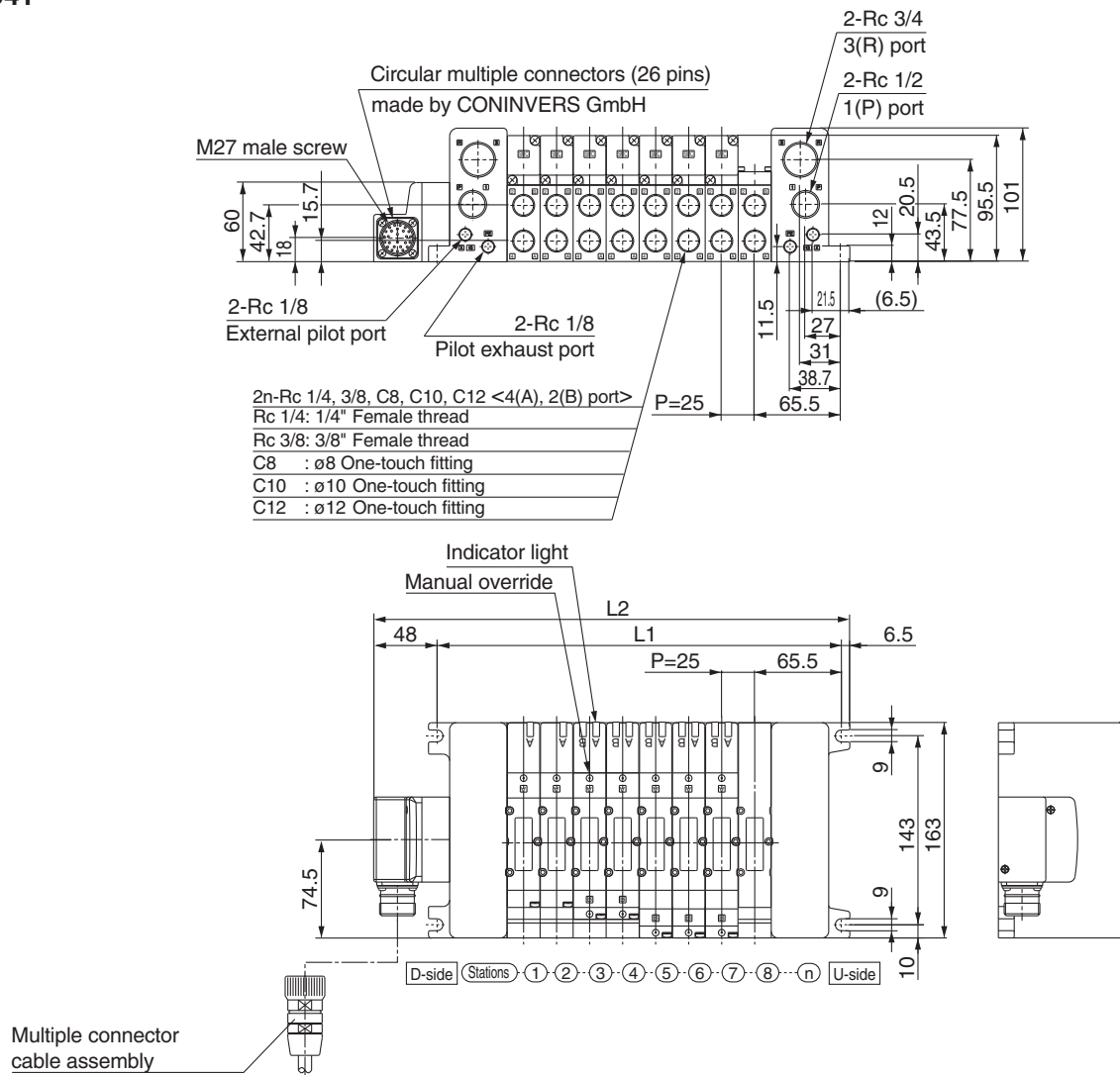
$$L2 = 16n + 110.5$$

n: Stations

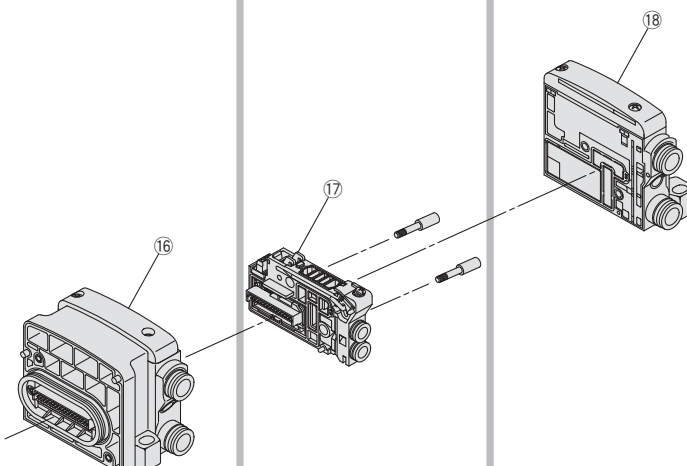
L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1		73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441
L2		126.5	142.5	158.5	174.5	190.5	206.5	222.5	238.5	254.5	270.5	286.5	302.5	318.5	334.5	350.5	366.5	382.5	398.5	414.5	430.5	446.5	462.5	478.5	494.5
L3		150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425	437.5	450	475	487.5	500	525
L4		160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	460.5	485.5	498	510.5	535.5

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

VV5QC41



		n: Stations															
L	n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L		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

Housing assembly and SI unit		D-side end plate assembly	Manifold block assembly	U-side end plate assembly
S Kit (Serial)	EX600 VQC1000 VQC2000 VQC4000			
	EX500 VQC1000 VQC2000 VQC4000			
	EX250 VQC1000 VQC2000 VQC4000			
	EX240 VQC4000			
F Kit (D-sub connector)	VQC1000 VQC2000 VQC4000			
P Kit (Flat ribbon cable)	VQC1000 VQC2000 VQC4000			
T Kit (Terminal block)	VQC1000 VQC2000 VQC4000			
L Kit (Lead wire)	VQC1000 VQC2000 VQC4000			
M Kit (Multiple connector)	VQC1000 VQC2000 VQC4000			

Base-Mounted Type

Manifold Assembly Part No.

Housing assembly and SI unit/Input block						
No.	Description	Part no.	Note	Applicable model		
				VQC1000	VQC2000	VQC4000
1	Valve Plate	EX600-ZMV1	To mount on manifold end plate	●	●	●
2	SI unit	EX600-SDN1	DeviceNet (–COM)	●	●	●
		EX600-SDN2	DeviceNet (+COM)	●	●	●
		EX600SMJ1	CC-Link (–CM)	●	●	●
		EX600-SMJ2	CC-Link (+CM)	●	●	●
		EX600-SPR1	PROFIBUS-DP (–COM)	●	●	●
		EX600-SPR2	PROFIBUS-DP (+COM)	●	●	●
3	End plate	EX600-ED2	End plate – M12 connector	●	●	●
		EX600-ED3	End plate – M7/8" connector	●	●	●
4	SI unit	EX500-Q001	DeviceNet (+COM)	●	●	●
		EX500-Q001-X1	PROFIBUS-DP (–COM)			
		EX500-Q101	DeviceNet (–COM)	●	●	●
		EX500-Q101-X1	Remote I/O (–COM)			
5	SI unit	EX250-SDN1-X102	DeviceNet (–COM)	●	●	●
		EX250-SPR1	PROFIBUS-DP	●	●	●
		EX250-MJ2	CC-Link	●	●	●
		EX250-SAS3	AS-i (8pin/8out 31 slave mode, 2 power supply systems)	●	●	●
		EX250-SAS5	AS-i (4in/4out 31 Slave mode, 2 power supply systems)	●	●	●
		EX250-SAS7	AS-i (8in/8out 31Slave mode, 1 power supply system)	●	●	●
		EX250-SAS9	AS-i (4pin/4out slave mode, 1 power supply)	●	●	●
		EX250-SCA1	CANopen	●	●	●
		EX250-SCN1	ControlNet	●	●	●
		EX250-SEN1	EtherNet/IP	●	●	●
6	Input block	EX250-IE1	M12, 2 inputs	●	●	●
		EX250-IE2	M12, 4 inputs	●	●	●
		EX250-IE3	M8, 4 inputs	●	●	●
7	End plate assembly	EX250-EA1	Direct mounting	●	●	●
		EX250-EA2	DIN rail mounting	●	●	●
8	SI unit	EX240-SDN2	DeviceNet (+COM)	—	—	●
		EX240-SPR1	PROFIBUS-DP (–COM)	—	—	●
9	Input block	EX240-IE1	M12, 8	—	—	●
10	End cover assembly	EX240-EA2	For manifold with input block	—	—	●
		EX240-EA4	For manifold without input block			
11	D-sub connector housing assembly	VVQC1000-F25-1	F kit, 25 pins	●	●	●
12	Flat ribbon cable housing assembly	VVQC1000-P26-1	P Kit, 26-pin	●	●	●
		VVQC1000-P20-1	P Kit, 20-pin			
13	Terminal block box	VVQC1000-T0-1	T Kit	●	●	●
14	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	●	●	●
15	Multiple connector housing assembly	VVQC1000-M26-1	M kit 26 pins	●	●	●

Base-Mounted Type

D-side end plate assembly

⑩ D-side end plate assembly part no.

VQC1000/2000

VVQC 1 000-3A-1-C8

Series

1	VQC1000
2	VQC2000

Port size

Symbol	VQC1000	VQC2000
C8	I	
C10		I
N9	I	
N11		I

Options

Nil	Centralized exhaust
R	External pilot
S	Direct exhaust outlet with built-in silencer

VQC4000

VVQC4000-3A-1

Kit type

1	S Kit
2	T Kit

Thread type

F	Rc
T	G
	NPT/NPTF

U-side end plate assembly

⑪ U-side end plate assembly part no.

VQC1000/2000

VVQC 1 000-2A-1-C8

Series

1	VQC1000
2	VQC2000

Port size

Symbol	VQC1000	VQC2000
C8	●	
C10		●
C12		● (Note)
N9	●	
N11		●
N13		● (Note)

Options

Nil	Centralized exhaust
R	External pilot
S	Direct exhaust outlet with built-in silencer

Supply/Exhaust port entry direction

1	Front
2 (Note)	Front and back

Note) VQC2000 only

Note) For supply/exhaust port with front and back entry type only.

VQC4000

VVQC4000-2A-1

Thread type

Nil	Rc
F	G
T	NPT/NPTF

Manifold block assembly

⑫ Manifold block assembly part no.

VVQC 1 000-1A-D-C6

Wiring specification

D	Double wiring
S	Single wiring

Series

1	VQC1000
2	VQC2000
4	VQC4000

Note) Tie-rods (2 pcs.) for additional stations included.

Options

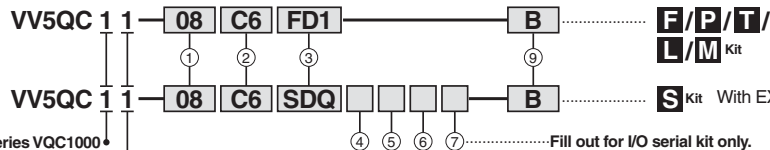
Nil	None
B (Note)	With back pressure check valve

Note) Except for VQC4000.

Port size

Symbol	Port size	VQC1000	VQC2000	VQC4000
C3	ø3.2 One-touch fitting	●		
C4	ø4 One-touch fitting	●	●	
C6	ø6	●	●	
C8	ø8		●	●
C10	ø10			●
C12	ø12			●
N1	ø1/8"	●		
N3	ø5/32"	●	●	
N7	ø1/4"	●	●	●
N9	ø5/16"		●	●
N11	ø3/8"			●
M5	M5 thread	●		
O2	Rc 1/4"			●
O3	Rc 3/8"			●
B	Rc 1/4" bottom ported			●
T02	1/4" NPT/NPTF			●
T03	3/8" NPT/NPTF			●
G02	1/4" G			●
G03	3/8" G			●

① How to order manifold



① Stations

01	1 station
...	...
...	...

The maximum number of stations differs depending on the electrical entry. Refer to ③.

② Cylinder port size

C3	With ø3.2 One-touch fitting
C4	With ø4 One-touch fitting
C6	With ø6 One-touch fitting
M5	M5 thread
CM	Mixed sizes and with port plug
L3	Top ported elbow With ø3.2 One-touch fitting
L4	Top ported elbow With ø4 One-touch fitting
L6	Top ported elbow With ø6 One-touch fitting
L5	M5 thread
B3	Bottom ported elbow With ø3.2 One-touch fitting
B4	Bottom ported elbow With ø4 One-touch fitting
B6	Bottom ported elbow With ø6 One-touch fitting
B5	M5 thread
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>

N1: ø1/8"
N3: ø5/32"
N7: ø1/4"
NM: Mixed

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

③ Electrical entry/Cable length

	D-side entry	Kit, Cable length	Stations ^{Note 2)}
F Kit	FD0	D-sub connector kit (25P) without cable	1 to 12 (24)
	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	PD0	Flat ribbon cable kit (26P) without cable	1 to 12 (24)
	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	
T Kit	PDC	Flat ribbon cable kit (20P) without cable ^{Note 1)}	1 to 9 (18)
	TD0	Terminal block box kit	1 to 10 (20)
L Kit	LD0	Lead wire kit (25 core) 0.6 m lead wire	1 to 12 (24)
	LD1	Lead wire kit (25 core) 1.5 m lead wire	
	LD2	Lead wire kit (25 core) 3.0 m lead wire	
M Kit	MD0	Multiple connector kit (26P) without cable	1 to 12 (24)
	MD1	Multiple connector kit (27P) with 1.5 m cable	
	MD2	Multiple connector kit (27P) with 3.0 m cable	
	MD3	Multiple connector kit (27P) with 5.0 m cable	
S Kit	Decentralized wiring serial kit (EX500)		1 to 8 (16)
	SD0A	Serial kit without SI unit	
	SDA1	Serial kit for Remote I/O	
	SDA2	Serial kit for DeviceNet/PROFIBUS-DP/CC-LINK	
	Input/Output serial kit (EX250)		1 to 12 (24)
	SD0	Serial kit without SI unit	
	SDQ	Serial kit DeviceNet compatible	
	SDN	Serial kit PROFIBUS-DP compatible	
	SDV	Serial kit CC-LINK compatible	
	SDY	Serial kit CANopen compatible	
	SDTA	AS-i, 8 in/8 out, 31 slave modes, 2 power supply	
	SDTB	AS-i, 4 in/4 out, 31 slave modes, 2 power supply	
	SDTC	AS-i, 8 in/8 out, 31 slave modes, 1 power supply	
	SDTD	AS-i, 4 in/4 out, 31 slave modes, 1 power supply	

Note 1) P Kit: Order the cable assembly separately for the type 20P.

Note 2) Numbers inside () indicate the maximum number of solenoids for mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. In the case of mixed wiring, use the option symbol "K".

④ 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).

⑤ Input block (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

⑥ 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)

⑦ Input block COM. (Fill out for I/O unit only)

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

⑧ 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)} (Except double wiring)
N	With name plate
R	External pilot ^{Note 4)}
S	Direct exhaust with built-in silencer ^{Note 5)}

* 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 in 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 in 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.

② How to order applicable valves

VQC 1 1 0 0 Y-5 E B

Series VQC1000

① Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A ^{Note)}	Dual 3 port valve (N.C. + N.C.)
B ^{Note)}	Dual 3 port valve (N.O. + N.O.)
C ^{Note)}	Dual 3 port valve (N.C. + N.O.)

Note) Available for the rubber seal type only.

② Seal type

0	Metal seal
1	Rubber seal

③ Function

Nil	Standard type (1 W)
K ^{Note 1)}	High voltage 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) Available for the metal seal type only.

Note 2) Not applicable to dual 3 port valve.

④ Coil voltage

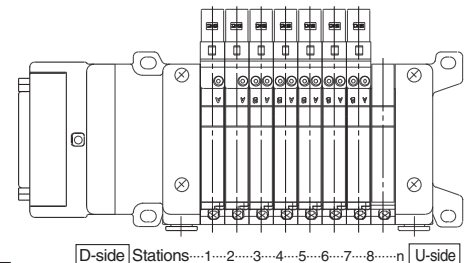
5	24 VDC ^{Note)}
6	12 VDC

Note) S kit is only available for 24 VDC.

⑤ Light/Surge voltage suppressor

Nil	With
E	Without ^{Note)}

Note) Not applicable to S kit.



* Stations are numbered in ascending order from the D-side.

⑥ Manual override

Nil	Non-locking push type (Tool required)
B	Slotted locking type (Tool required)
C	Locking type (Manual)
D	Slide locking type (Manual)

Manifold Specification Sheet**Series VQC1000/Plug-in Unit****Manifold model**

Date: / /

<F, L, M, P, T kit>

VV5QC 1 1

<S kit>

VV5QC 1 1

Fill out for S Kit only

Base mounted, plug-in

Series VQC1000

Kit type

Option

Customer name			
Contact person			
Specification sheet no.			
Purchase order no.			
Equipment name			
Quantity	set(s)	Required date	

Specifications

← D-side

* Indicate required stations with a "○".

U-side →

Description/Model		Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Valves	Single																											
	Double																											
	Closed center																											
	Exhaust center																											
	Pressure center																											
	Dual 3 port valve (A)																											
	Dual 3 port valve (B)																											
	Dual 3 port valve (C)																											
Options	Blanking plate VVQ1000-10A-1																											
	Individual SUP spacer VVQ1000-P-1-C6 SUP shutoff position: Specify 2 positions.																											
	Individual EXH spacer VVQ1000-R-1-C6 EXH shutoff position: Specify 2 positions.																											
	SUP block plate VVQ1000-16A																											
	EXH shutoff position (Note 1) (When using EXH block base) VVQC1000-19A-□-□																											
	Port plug (Note 2)		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Cylinder port sizes (Note 3) Fill out in case of mixed sizes (CML/MNM).	With ø3.2 (ø1/8") One-touch fitting	Side ported	C3 (N1)																									
	With ø4 (ø5/32") One-touch fitting	Side ported	C4 (N3)																									
	With ø6 (ø1/4") One-touch fitting	Side ported	C6 (N7)																									
	M5 thread	Side ported	M5																									
	Dual flow fitting VVQ1000-52A-C8																											
Special wiring specifications (Note 4)		Single wiring																										
		Double wiring																										
Description/Model		Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Notes	Note 1) Indicate the shutoff position. The D-side of the EXH block in the EXH passage is blocked.																											
	Note 2) When using port plugs, circle ports to specify.																											
	Note 3) When mounting an elbow fitting assembly (VVQ1000-F-L-C ₃), indicate "L C ₃ " in the table above.																											
	Note 4) In the case of single wiring or mixed wiring, connections to the connector terminals start from the A-side solenoid of station 1 and continue in order without skip ping any terminals.																											

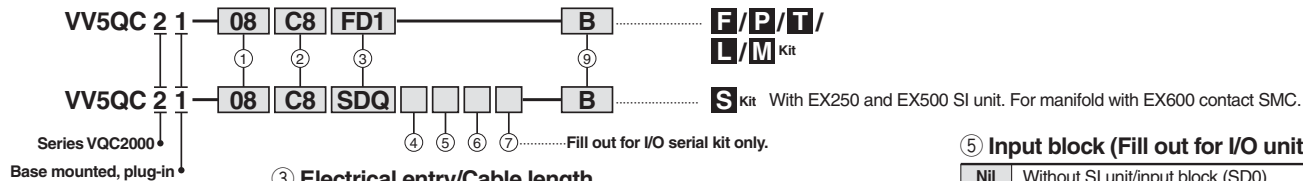
For SMC use only**Applicable valves and options**

Part no.	Qty.

Part no.	Qty.

Order no.	
Clerk (code no.)	
Dept. code	

① How to order manifold



① Stations

01	1 station
⋮	⋮

The maximum number of stations differs depending on the electrical entry. Refer to ③.

② Cylinder port size

C4	With ø4 One-touch fitting
C6	With ø6 One-touch fitting
C8	With ø8 One-touch fitting
CM	Mixed or 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□.

③ Electrical entry/Cable length

	D-side entry	Kit, Cable length	Stations ^{Note 2)}
F Kit	FD0	D-sub connector kit (25P) without cable	1 to 12 (24)
	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	PD0	Flat ribbon cable kit (26P) without cable	1 to 12 (24)
	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	
T Kit	PDC	Flat ribbon cable kit (20P) without cable ^{Note 1)}	1 to 9 (18)
	TD0	Terminal block box kit	1 to 10 (20)
L Kit	LD0	Lead wire kit (25 core) 0.6 m lead wire	1 to 12 (24)
	LD1	Lead wire kit (25 core) 1.5 m lead wire	
	LD2	Lead wire kit (25 core) 3.0 m lead wire	
M Kit	MD0	Multiple connector kit (26P) without cable	1 to 12 (24)
	MD1	Multiple connector kit (27P) with 1.5 m cable	
	MD2	Multiple connector kit (27P) with 3.0 m cable	
	MD3	Multiple connector kit (27P) with 5.0 m cable	
S Kit	Decentralized wiring serial kit (EX500)		1 to 8 (16)
	SD0A	Serial kit without SI unit	
	SDA1	Serial kit for Remote I/O	
	SDA2	Serial kit for DeviceNet/PROFIBUS-DP/CC-LINK	
	Input/Output serial kit (EX250)		1 to 12 (24)
	SD0	Serial kit without SI unit	
	SDQ	Serial kit DeviceNet compatible	
	SDN	Serial kit PROFIBUS-DP compatible	
	SDV	Serial kit CC-LINK compatible	
	SDY	Serial kit CANopen compatible	
	SDTA	AS-i, 8 in/8 out, 31 slave modes, 2 power supply	
	SDTB	AS-i, 4 in/4 out, 31 slave modes, 2 power supply	
	SDTC	AS-i, 8 in/8 out, 31 slave modes, 1 power supply	
	SDTD	AS-i, 4 in/4 out, 31 slave modes, 1 power supply	

Note 1) P Kit: Order the cable assembly separately for the type 20P.

Note 2) Numbers inside () indicate the maximum number of solenoids for mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. In the case of mixed wiring, use the option symbol "K".

④ 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).

⑤ Input block (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

⑥ 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)

⑦ Input block COM. (Fill out for I/O unit only)

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

⑧ 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)} (Except double wiring)
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.

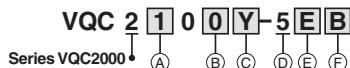
Note 3) Be sure to indicate the wiring specifications on the specification sheet.

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.

② How to order applicable valves



① Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A ^{Note)}	Dual 3 port valve (N.C. + N.C.)
B ^{Note)}	Dual 3 port valve (N.O. + N.O.)
C ^{Note)}	Dual 3 port valve (N.C. + N.O.)

Note) Available for the rubber seal type only.

② Seal type

0	Metal seal
1	Rubber seal

③ Function

Nil	Standard type (1 W)
K ^{Note 1)}	High voltage 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) Available for the metal seal type only.

Note 2) Not applicable to Dual 3 port valve.

④ Coil voltage

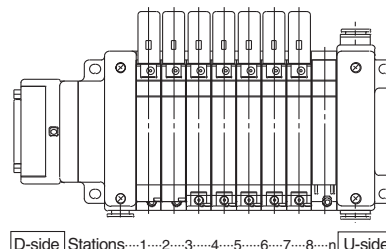
5	24 VDC ^{Note)}
6	12 VDC

Note) S kit is only available for 24 VDC.

⑤ Light/Surge voltage suppressor

Nil	With
E	Without ^{Note)}

Note) Not applicable to S kit.



* Stations are numbered in ascending order from the D-side.

⑥ Manual override

Nil	Non-locking push type (Tool required)
B	Slotted locking type (Tool required)
C	Locking type (Manual)
D	Slide locking type (Manual)

Manifold Specification Sheet**Series VQC2000/Plug-in Unit****Manifold model**

Date: / /

<F, L, M, P, T kit>

VV5QC 2 1

<S kit>

VV5QC 2 1

Fill out for S Kit only

• Base mounted, plug-in
 • Series VQC2000
 • Kit type
 • Option

Customer name			
Contact person			
Specification sheet no.			
Purchase order no.			
Equipment name			
Quantity	set(s)	Required date	

Specifications

← D-side

* Indicate required stations with a "○".

U-side →

Description/Model		Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Valves	Single																										
	Double																										
	Closed center																										
	Exhaust center																										
	Pressure center																										
	Dual 3 port valve (A)																										
	Dual 3 port valve (B)																										
	Dual 3 port valve (C)																										
Options	Blanking plate VVQ2000-10A-1																										
	Individual SUP spacer VVQ2000-P-1-C8																										
	SUP shutoff position: Specify 2 positions.																										
	Individual EXH spacer VVQ2000-R-1-C8																										
	EXH shutoff position: Specify 2 positions.																										
	SUP block plate VVQ2000-16A																										
	EXH block plate VVQ2000-19A																										
Port plug (Note 1)			A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	
Cylinder port sizes Fill out in case of mixed sizes (C/M/L/M/M/M).	With ø4 (ø5/32") One-touch fitting	Side ported	C4 (N3)																								
	With ø6 (ø1/4") One-touch fitting	Side ported	C6 (N7)																								
	With ø8 (ø5/16") One-touch fitting	Side ported	C8 (N9)																								
Special wiring (Note 2) specifications	Single wiring																										
	Double wiring																										
Description/Model		Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Notes	Note 1) When using port plugs, circle ports to specify.																										
	Note 2) In the case of single wiring or mixed wiring, connections to the connector terminals start from the A-side solenoid of station 1 and continue in order without skipping any terminals.																										

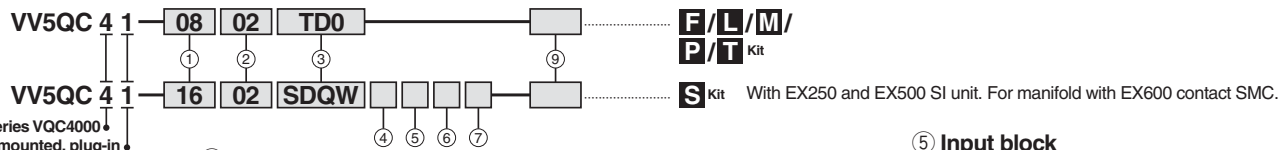
For SMC use only**Applicable valves and options**

Part no.	Qty.

Part no.	Qty.

Order no.	
Clerk (code no.)	
Dept. code	

① How to order manifold



① Stations

01	1 station
...	...

The maximum number of stations differs depending on the electrical entry. Refer to ③.

② 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:

<For One-touch fittings>

N7: ø1/4"
N9: ø5/16"
N11: ø3/8"
NM: Mixed

<For threads> P, R, A, B port

VV5QC41-0803 TD0

Cylinder port

Thread type

Nil	Rc
F	G
T	NPT/NPTF

Note) P and R ports use the same type of threads.

③ Electrical entry

	D-side entry	Kit, Cable length	Stations ^{Note 2)}
F Kit	FD0	D-sub connector kit (25P) without cable	1 to 12 (24)
	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	PD0	Flat ribbon cable kit (26P) without cable	1 to 12 (24)
	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	
T Kit	PDC	Flat ribbon cable kit (20P) without cable ^{Note 1)}	1 to 9 (18)
	TD0	Terminal block box kit	1 to 10 (20)
L Kit	LD0	Lead wire kit (25 core) 0.6 m lead wire	1 to 12 (24)
	LD1	Lead wire kit (25 core) 1.5 m lead wire	
	LD2	Lead wire kit (25 core) 3.0 m lead wire	
M Kit	MD0	Multiple connector kit (26P) without cable	1 to 12 (24)
	MD1	Multiple connector kit (27P) with 1.5 m cable	
	MD2	Multiple connector kit (27P) with 3.0 m cable	
	MD3	Multiple connector kit (27P) with 5.0 m cable	
S Kit	Decentralized wiring serial kit (EX500)		1 to 8 (16)
	SD0A	Serial kit without SI unit	
	SDA1	Serial kit for Remote I/O	
	SDA2	Serial kit for DeviceNet/PROFIBUS-DP/CC-LINK	
	Input/Output serial kit (EX250)		1 to 12 (24)
	SD0	Serial kit without SI unit	
	SDQ	Serial kit DeviceNet compatible	
	SDN	Serial kit PROFIBUS-DP compatible	
	SDV	Serial kit CC-LINK compatible	
	SDY	Serial kit CANopen compatible	
	Input/Output serial transmission kit (EX240)		1 to 12 (16)
	SD0W	Serial kit without SI unit	
	SDQW	Serial kit DeviceNet compatible	
	SDNW	Serial kit PROFIBUS-DP compatible	
	SDVW	Serial kit CC-LINK compatible	
	SDTA	AS-i, 8 in/8 out, 31 slave modes, 2 power supply	
	SDTB	AS-i, 4 in/4 out, 31 slave modes, 2 power supply	
	SDTC	AS-i, 8 in/8 out, 31 slave modes, 1 power supply	
	SDTD	AS-i, 4 in/4 out, 31 slave modes, 1 power supply	

Note 1) P Kit: Order the cable assembly separately for the type 20P.

Note 2) Numbers inside () indicate the maximum number of solenoids for mixed single and double wiring. The maximum number of stations is determined by the total number of solenoids. In the case of mixed wiring, use the option symbol "K".

④ 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	○	—	—	—	○	—	—	○	○	○	○	○
NIL -COM	○	○	○	○	—	○	○	○	○	○	○	—

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

② How to order applicable valves

VQC 4 1 0 0 Y-5 E B

Series VQC4000

⑤ Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
6	3 position perfect

⑥ Coil voltage

5	24 VDC ^{Note)}
6	12 VDC

Note) S kit is only available for 24 VDC.

⑦ Seal type

0	Metal seal
1	Rubber seal

⑧ Light/Surge voltage suppressor

Nil	With
E	Without indicator light, with surge voltage suppressor

⑨ Manual override

Nil	Non-locking push type (Tool required)
B	Slotted locking type (Tool required)

⑩ 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.

⑪ 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.

⑫ Input block type (Fill out for I/O unit only)

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

⑬ Input block COM. (Fill out for I/O unit only)

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

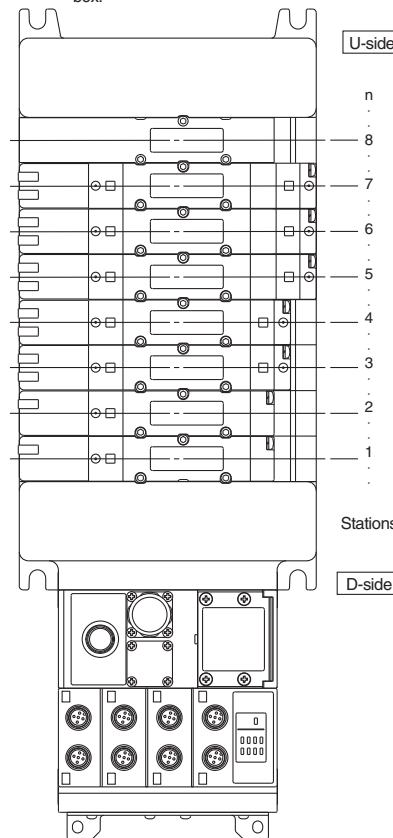
⑭ Options

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

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

Note 1) Be sure to indicate the wiring specifications in the specification order sheet.

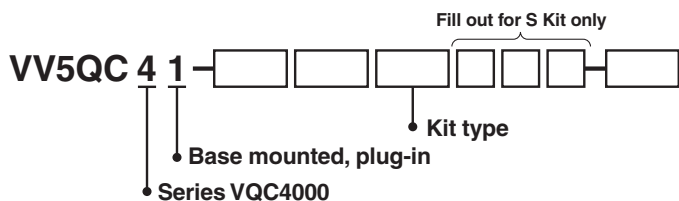
Note 2) The mounting position of the name plate is on the top face of the cover for the terminal block box.



* Stations are numbered in ascending order from the D-side.

Date: / /

Manifold model





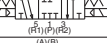
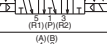

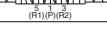
Customer name			
Contact person			
Specification sheet no.			
Purchase order no.			
Equipment name			
Quantity	set(s)	Required date	

Specifications

← D-side

* Indicate required stations with a "○".

U-side →

Description/Model		Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Valves	Single																											
	Double																											
	Closed center																											
	Exhaust center																											
	Pressure center																											
	Perfect																											
Options	Blanking plate VVQ4000-10A-1																											
	Individual SUP spacer VVQ4000-P-1-02/03																											
	Individual EXH spacer VVQ4000-P-1-02/03																											
	Throttle valve spacer VVQ4000-20A-1																											
	Perfect spacer with residual pressure release valve VVQ4000-25A-1																											
	Interface regulator (A regulator) ARBQ4000-00-A-1																											
	Interface regulator (B regulator) ARBQ4000-00-B-1																											
	Interface regulator (P regulator) ARBQ4000-00-P-1																											
	SUP/EXH block plate VVQ4000-16A		P																									
		R1																										
		R2																										
Cylinder port sizes Fill out in case of mixed sizes (CWL/MNM).	Rc 1/4	02																										
	Rc 3/8	03																										
	With ø8 (ø1/4") One-touch fitting	C8 (N7)																										
	With ø10 (ø5/16") One-touch fitting	C10 (N9)																										
	With ø12 (ø3/8") One-touch fitting	C10 (N11)																										
	Bottom ported Rc 1/4																											
Special wiring ^{Note 1)} specifications	Single wiring																											
	Double wiring																											
Description/Model		Stations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
Note	Note 1) In the case of single wiring or mixed wiring, connections to the connector terminals start from the A-side solenoid of station 1 and continue in order without skipping any terminals.																											

For SMC use only

Applicable valves and options

Part no.	Qty.

Part no.	Qty.

Order no.	
Clerk (code no.)	
Dept. code	



Safety Instructions

Caution

The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary. If anything is unclear, contact your nearest sales branch. (1-800-SMC-SMC1)

Limited Warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited Warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited Warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.*3)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

* 3) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.


Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.





Series VQC

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by a label of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

 **Caution:** Operator error could result in injury or equipment damage.

 **Warning:** Operator error could result in serious injury or loss of life.

 **Danger:** In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power — Recommendations for the application of equipment to transmission and control systems.

Note 2) JIS B 8370: General rules for pneumatic equipment

Warning

1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc. (Bleed air into the system gradually to create back pressure.)

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, press applications, or safety equipment.
3. An application that has the possibility of having negative effects on people, property, or animals, and therefore requires special safety analysis.



Design

Warning

1. Actuator drive

When an actuator, such as a cylinder, is to be driven using a valve, take appropriate measures to prevent any potential danger caused by actuator operation.

2. Intermediate stopping

When a 3-position closed center valve is used to stop a cylinder's piston at an intermediate position, accurate stopping of the piston in a predetermined position is not possible due to the compressibility of air.

Furthermore, since valves and cylinders are not guaranteed for zero air leakage, it may not be possible to hold a stopped position for an extended length of time. Contact SMC if it is necessary to hold a stopped position for an extended time.

3. Effect of back pressure when using a manifold

Use caution when valves are used on a manifold, as actuator malfunction due to back pressure may occur. Special caution is necessary when using a 3-position exhaust center valve, or when driving a single acting cylinder. In cases where there is a danger of this kind of malfunction, take countermeasures by using a back-pressure check valve, an individual EXH spacer assembly, or an EXH blocking plate.

4. Dealing with pilot exhaust

Operate the pilot exhaust port (PE) with silencers mounted on both the D and U sides, or with release to atmosphere. If merged with the main exhaust, the main valve may malfunction due to back pressure.

5. Holding of pressure (including vacuum)

Since valves are subject to air leakage, they cannot be used for applications such as holding pressure (including vacuum) in a pressure vessel.

6. Not for use as an emergency shutoff valve

None of the valves featured in this catalog is designed for safety applications such as an emergency shutoff valve. If application to this type of system is required, other reliable safety assurance measures should also be adopted.

7. Maintenance space

The installation should allow sufficient space for maintenance activities.

8. Release of residual pressure

Provide a residual pressure release function for maintenance purposes. Special consideration should be given to the release of residual pressure between the valve and cylinder in the case of a 3-position closed center type valve.

9. Vacuum applications

When a valve is used for vacuum switching, take appropriate measures against the suction of external dust or other contaminants through vacuum pads and exhaust ports. An external pilot type valve should be used in such cases. Contact SMC regarding the use of an internal pilot type or air operated valve.

10. Take suitable protective measures in locations or applications where valves are constantly exposed to water.

Selection

Warning

1. Confirm all specifications.

The products featured in this catalog are designed only for use in compressed air systems (including vacuum). Do not operate at pressures or temperatures beyond the range of specifications, as this can cause damage or malfunction. (Refer to specifications.)

Contact SMC when using a fluid other than compressed air (including vacuum).

2. Extended periods of continuous energization

Contact SMC if valves will be continuously energized for extended periods of time.

Caution

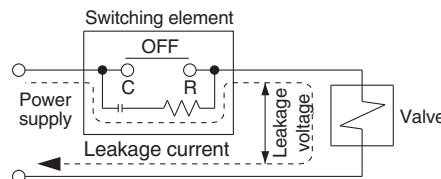
1. Momentary energization

If a double solenoid valve will be operated with momentary energization, it should be energized for at least 0.1 second.

However, depending on the secondary load conditions, it should be energized until the cylinder reaches the stroke end position. If the valve is to be used in an air blowing application, it should be energized continuously during the application.

2. Leakage voltage

When using a C-R element (surge voltage suppressor) for protection of the switching element, please keep in mind that leakage voltage will increase due to leakage current flowing through the C-R element.



Limit the amount of residual leakage voltage to the following values:

With DC coil

2% or less of rated voltage

3. Low temperature operation

Avoid ambient temperatures outside the range of -10°C to 50°C . At low temperatures, take any necessary steps to avoid solidification or freezing of drainage and moisture.

4. For air blowing applications

When using solenoid valves for air blowing, use external pilot type valves.

Also, air supply to the external pilot port should be compressed air that is within the pressure range prescribed in the specifications.

5. Mounting orientation

In the case of a single solenoid, the mounting orientation is unrestricted. In the case of double solenoid or 3-position valves, mount so that the spool valve is horizontal.

Also, when mounting for an application that will inevitably involve vibration or impact, mount so that the spool valve is at a right angle to the direction of vibration.

Do not use in applications where vibration or impact exceed the product's specifications.



Series VQC

5-Port Solenoid Valve Precautions 2

Be sure to read before handling.

Mounting

⚠ Warning

1. If air leakage increases or equipment does not operate properly, stop operation.

After mounting, repairs, or equipment modification, connect the compressed air and power supplies, and perform appropriate function and leakage inspections to confirm that the unit is mounted properly.

2. Instruction manual

Mount and operate the product only after reading the manual carefully and understanding its contents. Always keep the manual handy for easy reference.

3. Painting and coating

Warnings or specifications printed or pasted on the product should not be erased, removed or covered up.

Piping

⚠ Caution

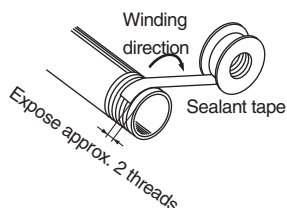
1. Preparation before piping

Before piping is connected, it should be thoroughly flushed out with air or washed out with water to remove chips, cutting oil and other debris.

2. Wrapping of sealant tape

When connecting pipes and fittings, etc., be sure that neither chips from the pipe threads nor sealing material get inside the valve.

When using sealant tape, leave 1.5 to 2 thread ridges exposed at the end of the pipe/fitting.



3. When using closed center type valves

When using closed center type valves, check carefully to make sure there are no air leaks from the piping between the valves and cylinders.

4. Ensure tightening to the prescribed tightening torques.

When screwing fittings into valves, tighten according to the torques given below.

Tightening torques for piping

Connection thread	Proper tightening torque (N·m)
Rc 1/8	7 to 9
Rc 1/4	12 to 14
Rc 3/8	22 to 24
Rc 1/2	28 to 30
Rc 3/4	28 to 30

5. Connection of piping to products

When connecting piping to a particular product, refer to the product's instruction manual to avoid mistakes regarding the supply port and other connections as applicable.

Wiring

⚠ Caution

1. Polarity

Always confirm whether or not there is polarity when connecting a power supply to a DC specification solenoid valve equipped with a (light) voltage surge suppressor.

If there is a polarity, observe the following precautions:

- If there is no built-in diode for polarity protection:

Switching polarity by mistake poses the danger of burnout to the valve's built-in diode and the switching element on the control mechanism side, as well as to the power supply mechanism.

- If there is a diode for polarity protection:

Switching polarity by mistake will cause the valve's switching function to stop.

* Series VQ4000 has no polarity. (It is a polarity-free type valve.)

2. Applied voltage

Be careful to apply the proper voltage when connecting electric power to the solenoid valve. Application of improper voltage may cause malfunction or coil damage.

3. Confirm the connections.

After completing the wiring, confirm that all the connections are correct.

Lubrication

⚠ Caution

1. Lubrication

- 1) The valve has been lubricated for life at the factory, and does not require any further lubrication.

- 2) Should you wish to apply additional lubrication, however, please be sure to use ISO VG32 Class 1 turbine oil (without additives).

Please be aware, however, that once additional lubrication is applied, it must be continued to avoid malfunctions, as the new lubricant will completely cancel out the original lubrication.



Series VQC

5-Port Solenoid Valve Precautions 3

Be sure to read before handling.

Air Supply

Warning

1. Use clean air.

Do not use compressed air which contains chemicals, synthetic oils containing organic solvents, salts or corrosive gases, etc., as this can cause damage or malfunction.

Caution

1. Install air filters.

Install air filters close to valves at their upstream side. A filtration degree of 5 μ m or less should be selected.

2. Install an air dryer or after-cooler.

Compressed air that includes excessive drainage may cause malfunction of valves and other pneumatic equipment. To prevent this, install an air dryer or after-cooler.

3. If excessive carbon powder is generated, eliminate it by installing mist separators at the upstream side of valves.

If excessive carbon powder is generated by the compressor, it may adhere to the inside of valves and cause malfunction.

Refer to SMC's "Air Cleaning Equipment" catalog for further details on compressed air quality.

Operating Environment

Warning

1. Do not use valves where there is direct contact with, or in atmospheres of, corrosive gases, chemicals, salt water, water or steam.

2. Do not use in an explosive atmosphere.

3. Do not use in locations subject to vibration or impact. Confirm the specifications for each series.

4. A protective cover should be used to shield valves from direct sunlight.

5. Shield valves from radiated heat generated by nearby heat sources.

6. Employ suitable protective measures in locations where there is contact with water droplets, oil, or welding spatter.

7. When solenoid valves are mounted in a control panel or are energized for extended periods of time, employ measures to radiate excess heat so that temperatures remain within the valve specification range.

Maintenance

Warning

1. Perform maintenance procedures as shown in the instruction manual.

If handled improperly, malfunction or damage of machinery or equipment may occur.

2. Equipment removal and supply/exhaust of compressed air

When equipment is to be removed, first confirm that measures are in place to prevent dropping of driven objects and run-away of equipment, etc. Then cut the supply air pressure and electric power, and exhaust all compressed air from the system using its residual pressure release function.

When the equipment is to be started again after remounting or replacement, first confirm that measures are in place to prevent lurching of actuators and then confirm that equipment operates normally.

3. Infrequent operation

Valves should be switched at least once every 30 days to prevent malfunction. (Use caution regarding the air supply.)

4. Manual override operation

When the manual override is operated, connected equipment will be actuated. Confirm safety before operating.

Caution

1. Filter drainage

Drain out condensate from air filters regularly. (Refer to specifications.)

2. Lubrication

In the case of rubber seals, once lubrication has been started, it must be continued.

Use VG32 Class 1 turbine oil (without additives). Other lubricating oils will cause malfunctions.

Contact SMC regarding VG32 Class 2 turbine oil (with additives).

How to Find the Flow Rate (at air temperature of 20°C)

Subsonic flow when $P_1 + 0.1013 < 1.89 (P_2 + 0.1013)$

$$Q = 226S \sqrt{\Delta P (P_2 + 0.1013)}$$

Sonic flow when $P_1 + 0.1013 \geq 1.89 (P_2 + 0.1013)$

$$Q = 113S (P_1 + 0.1013)$$

Q: Air flow rate [L/min (ANR)]

S: Effective area [mm²]

Δ P: Pressure drop rate (P₁-P₂) [MPa]

P₁: Upstream pressure [MPa]

P₂: Downstream pressure [MPa]

* Correction for different air temperatures

Multiply the flow rate calculated with the above formulas by a coefficient from the table below.

Air temperature (°C)	-20	-10	0	10	30	40	50	60
Correction coefficient	1.08	1.06	1.04	1.02	0.98	0.97	0.95	0.94



Series VQC Specific Product Precautions 1

Be sure to read before handling.
Refer to pages 64 through 67 for safety instructions and common precautions.

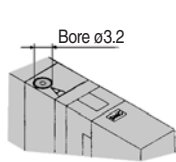
Warning Manual Override

Since connected equipment will operate when the manual override is activated, confirm that conditions are safe prior to activation.

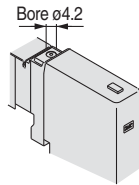
The non-locking push type (tool required) is standard, and the slotted locking type (tool required) is optional.

■ VQC1000/2000

Non-locking push type (tool required)



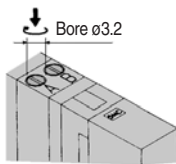
VQC1000



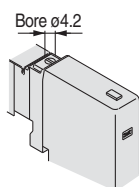
VQC2000

Push down the manual override button with a small screwdriver, etc., until it stops. The manual override will return when released.

Slotted locking type (tool required) <Optional>



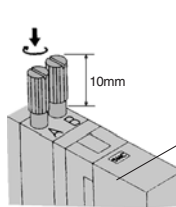
VQC1000



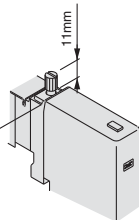
VQC2000

Push down the manual override button with a small flat head screwdriver until it stops, and turn it clockwise 90° to lock it. Turn it counter-clockwise to release it.

Locking type (manual) <Optional>



VQC1000

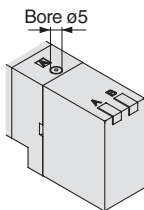


VQC2000

Push down the manual override button with a small flat head screwdriver or with your finger until it stops, and turn it clockwise 90° to lock it. Turn it counterclockwise to release it.

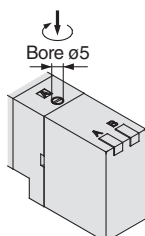
■ VQC4000

Non-locking push type (tool required)

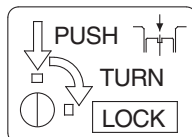


Push down the manual override button with a small screwdriver until it stops. The manual override will return when released.

Locking type (manual) <Optional>

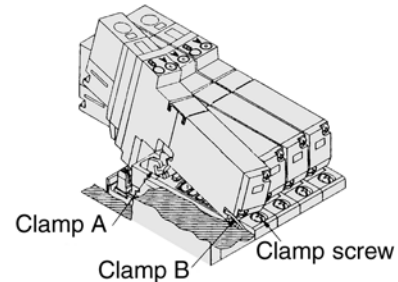


Push down the manual override button with a small flat head screwdriver until it stops, and turn it clockwise 90° to lock it. Turn it counter-clockwise to release it.



Caution

Solenoid Valve Removal and Mounting VQC1000/2000



Removal steps

1. Loosen the clamp screws until they turn freely. (The screws do not come out.)
2. Remove the solenoid valve from clamp B by lifting the coil side of the valve while pushing on the screw top.
If pushing down on the screw is difficult, you can alternately press down on the valve gently in the area near the manual override.

Mounting steps

1. Push the clamp screws. Clamp A opens. Now insert the end plate hook of the valve into clamp B from an angle.
2. Push the valve down into place. (When you release the screws, the valve will be locked into clamp A.)
3. Tighten the clamp screws with a tightening torque of 0.25 to 0.35N·m for VQC1000 and 0.5 to 0.7N·m for VQC2000.

Caution

Do not let foreign matter stick on the seal side of the gasket and solenoid, as this will cause air leakage.

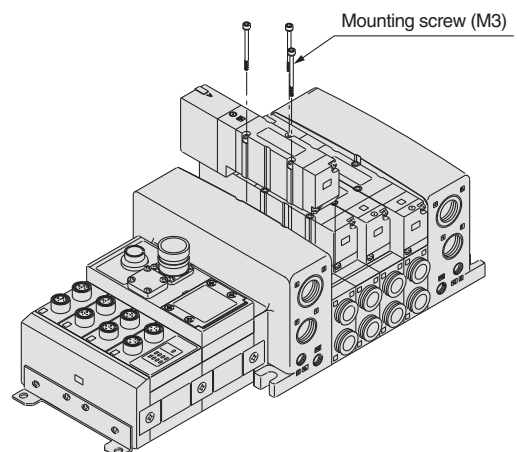
Caution

Valve Mounting

VQC4000

After confirming that the gasket is installed correctly, securely tighten the mounting screws according to the tightening torque shown below.

Proper tightening torque (N·m)
0.8 to 1.2





Series VQC Specific Product Precautions 2

Be sure to read before handling.

Refer to pages 64 through 67 for safety instructions and common precautions.

⚠ Caution

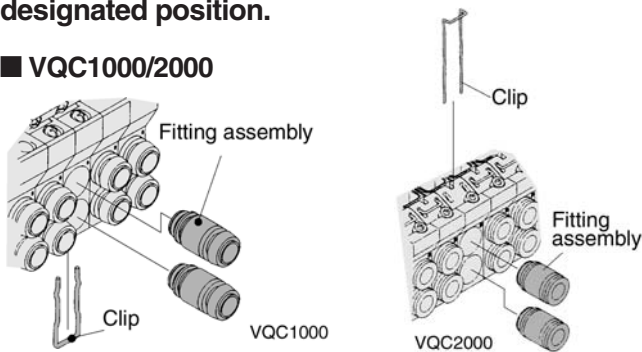
Replacing One-touch fittings

Cylinder port fittings are available in cassette type and can be replaced easily.

Fittings are secured with a retaining clip that is inserted from the top side of the valve. After removing the valve, remove the clip with a flat head screw driver to replace the fittings.

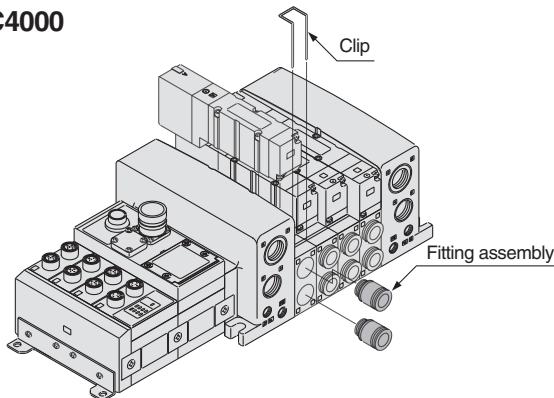
To mount a fitting, insert the fitting assembly until it stops and reinsert the retaining clip to its designated position.

■ VQC1000/2000



Applicable tube O.D.	Fitting assembly part no.	
	VQC1000	VQC2000
ø3.2	VVQ1000-50A-C3	—
ø4	VVQ1000-50A-C4	VVQ1000-51A-C4
ø6	VVQ1000-50A-C6	VVQ1000-51A-C6
ø8	—	VVQ1000-51A-C8
M5	VVQ1000-50A-M5	—
ø1/8"	VVQ1000-50A-N1	—
ø5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3
ø1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7
ø5/16"	—	VVQ1000-51A-N9

■ VQC4000



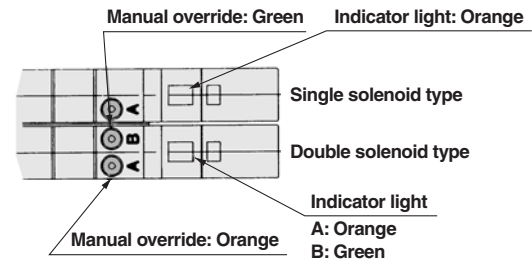
Applicable tube O.D.	Fitting assembly part no.	
	VQC4000	
ø8	VVQ4000-50B-C8	
ø10	VVQ4000-50B-C10	
ø12	VVQ4000-50B-C12	
ø1/4"	VVQ4000-50B-N7	
ø5/16"	VVQ4000-50B-N9	
ø3/8"	VVQ4000-50B-N11	

⚠ Caution

Light/Surge voltage suppressor VQC1000/2000

Indicator lights are all positioned on one side for both single solenoid and double solenoid type valves.

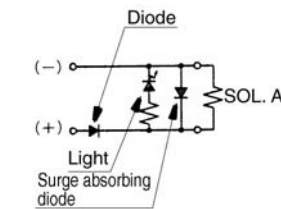
For double solenoid type, 2 colors that are same as the manual override are used to indicate the energization of A-side or B-side.



(For VQC1000)

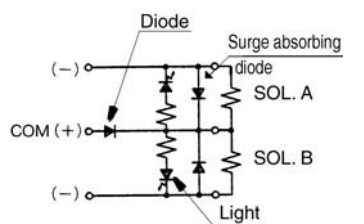
DC circuit

Single solenoid type



Note) A-side energized: Light (orange) ON
B-side energized: Light (green) ON

Double solenoid type

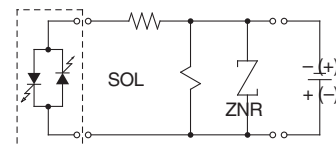


With miswiring prevention mechanism
With surge absorbing mechanism (surge absorb-ing diode) mechanism

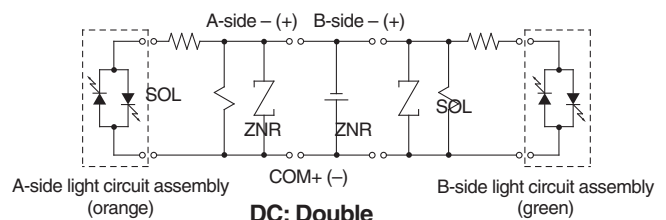
⚠ Caution

Internal Wiring Specifications

VQC4000



Light circuit assembly (orange) **DC: Single**



A-side light circuit assembly (orange) **DC: Double** B-side light circuit assembly (green)



Series VQC

Specific Product Precautions 3

Be sure to read before handling.

Refer to pages 64 through 67 for safety instructions and common precautions.

Serial wiring EX500/EX250/EX240 Precautions

Warning

1. These products are intended for use in general factory automation equipment.

Avoid using these products in machinery/equipment which affects human safety, and in cases where malfunction or failure can result in extensive damage.

2. Do not use in explosive environments, in the presence of inflammable gases, or in corrosive environments. This can cause injury or fire.
3. Work such as transporting, installing, piping, wiring, operation, control and maintenance should be performed by knowledgeable and qualified personnel only. As handling involves the risk of a danger of electrocution, injury or fire.
4. Install an external emergency stop circuit that can promptly stop operation and shut off the power supply.
5. Do not modify these products. Modifications done to these products carry the risk of injury and damage.

Caution

1. Read the instruction manual carefully, strictly observe the precautions and operate within the range of the specifications.
2. Do not drop these products or submit them to strong impacts. This can cause damage, failure or malfunction.
3. In locations with poor electrical conditions, take steps to ensure a steady flow of the rated power supply. Use of a voltage outside of the specifications can cause malfunction, damage to the unit, electrocution or fire.
4. Do not touch connector terminals or internal circuit elements when current is being supplied. There is a danger of malfunction, damage to the unit or electrocution if connector terminals or internal circuit elements are touched when current is being supplied.

Be sure that the power supply is OFF when adding or removing manifold valves or input blocks or when connecting or disconnecting connectors.
5. Operate at an ambient temperature that is within the specifications. Even when the ambient temperature range is within the specifications, do not use in locations where there are rapid temperature changes.

Caution

6. Keep wire scraps and other extraneous materials from getting inside these products. This can cause fire, failure or malfunction.
7. Give consideration to the operating environment depending on the type of enclosure being used.

To achieve IP65 and IP67 protection, provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors. Also, provide waterproof caps when there are unused ports, and perform proper mounting of input units, input blocks, SI units and manifold valves. Provide a cover or other protection for applications in which there is constant exposure to water.
8. Use the proper tightening torques.

There is a possibility of damaging threads if tightening exceeds the tightening torque range.
9. Provide adequate protection when operating in locations such as the following:
 - Where noise is generated by static electricity
 - Where there is a strong electric field
 - Where there is a danger of exposure to radiation
 - When in close proximity to power supply lines
10. When these products are installed in equipment, provide adequate protection against noise by using noise filters.
11. Since these products are components whose end usage is obtained after installation in other equipment, the customer should confirm conformity to EMC directives for the finished product.
12. Do not remove the name plate.
13. Perform periodic inspections and confirm normal operation, otherwise it may be impossible to guarantee safety due to unexpected malfunction or erroneous operation.



Series VQC Specific Product Precautions 4

Be sure to read before handling.

Refer to pages 64 through 67 for safety instructions and common precautions.

Power Supply Safety Instructions

Caution

1. Operation is possible with a single power supply or a separate power supply. However, be sure to provide two wiring systems (one for solenoid valves, and one for input and control units).
2. Use the following UL approved products for DC power supply combinations.

- (1) Controlled voltage current circuit conforming to UL508
Circuit uses the secondary coil of an isolated transformer as the power supply, satisfying the following conditions.
- Max. voltage (with no load): 30Vrms (42.4V peak) or less
 - Max. current: ① 8A or less (including shorts), and
② When controlled by a circuit protector (fuse) with the following ratings:

No-load voltage (V peak)	Max. current rating
0 to 20 [V]	5.0
Over 20 [V] and up to 30 [V]	100
	Peak voltage value

- (2) A circuit (class 2 circuit) with maximum 30Vrms (42.4V peak) or less, and a power supply consisting of a class 2 power supply unit conforming to UL1310, or a class 2 transformer conforming to UL1585

Cable Safety Instructions

Caution

1. Avoid miswiring, as this can cause malfunction, damage and fire in the unit.
2. To prevent noise and surge in signal lines, keep all wiring separate from power lines and high voltage lines. Otherwise, this can cause a malfunction.
3. Check wiring insulation, as defective insulation can cause damage to the unit when excessive voltage or current is applied.
4. Do not bend or pull cables repeatedly, and do not place heavy objects on them or allow them to be pinched. This can cause broken lines.

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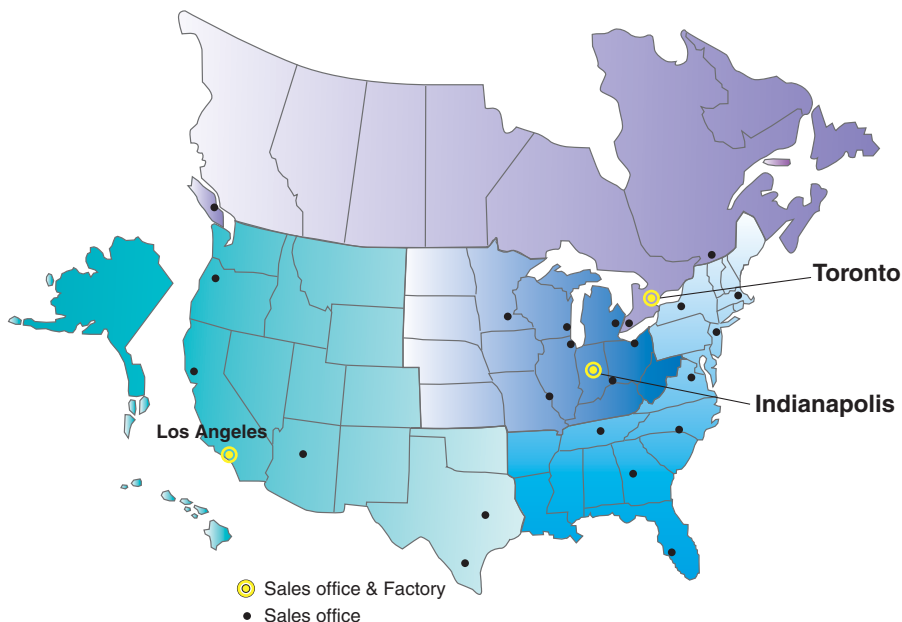
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