Series VQC4000
Base Mounted
Plug-in Unit

How to Order Manifold

VV5QC 4 1 – 08 02 TD0 ..... F / L / M
P / T Kit

VV5QC 4 1 – 16 03 SDQW ..... S Kit

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

Option

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

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

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

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

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

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

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

SI unit COM.

SI unit COM		EX240		EX250					EX500				EX126
		DeviceNet	PROFIBUS-DP	DeviceNet	PROFIBUS-DP	CC-LINK	AS-i	CANopen	DeviceNet	PROFIBUS-DP	CC-LINK	Remote I/O	CC-LINK
Nil	+COM	○	—	—	—	○	—	—	○	○	○	○	○
N	–COM	—	○	○	○	—	○	○	○	○	○	○	—

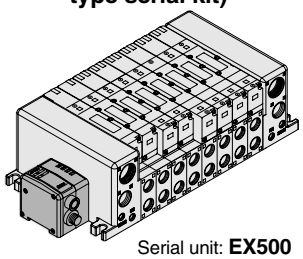
Note) Leave the box blank for the SI unit COM. without SI unit (SD0).

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

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

Kit Designation/Electrical Entry/Cable Length

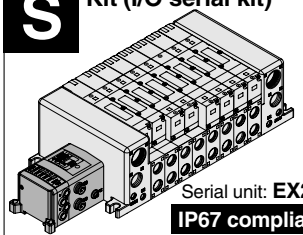
S Kit (Decentralized wiring type serial kit)



Serial unit: **EX500**
IP67 compliant

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	

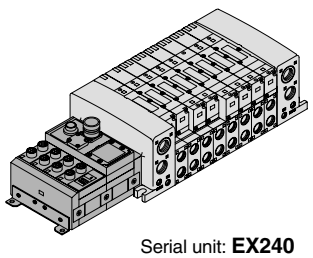
S Kit (I/O serial kit)



Serial unit: **EX250**
IP67 compliant

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	
SDV	Serial kit for CC-LINK	
SDTA	AS-i, 8 in/out, 31 slave modes, 2 power supply systems	1 to 4 stations (8 stations)
SDTB	AS-i, 4 in/out, 31 slave modes, 2 power supply systems	1 to 2 stations (4 stations)
SDTC	AS-i, 8 in/out, 31 slave modes, 1 power supply systems	1 to 4 stations (8 stations)
SDTD	AS-i, 4 in/out, 31 slave modes, 1 power supply systems	1 to 2 stations (4 stations)

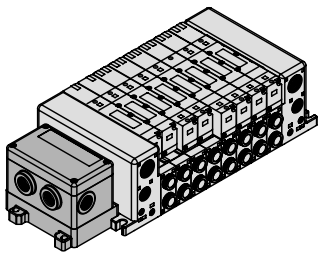
S Kit (I/O serial transmission kit)



Serial unit: **EX240**
IP65 compliant

SD0W	Serial kit without SI unit	1 to 12 stations (16 stations)
SDQW	Serial kit for DeviceNet	
SDNW	Serial kit for PROFIBUS-DP	

S Kit (Serial output kit)



Serial unit: **EX126**
IP67 compliant

SDVB	Serial kit for CC-LINK	1 to 8 stations (16 stations)

How to Order Valves

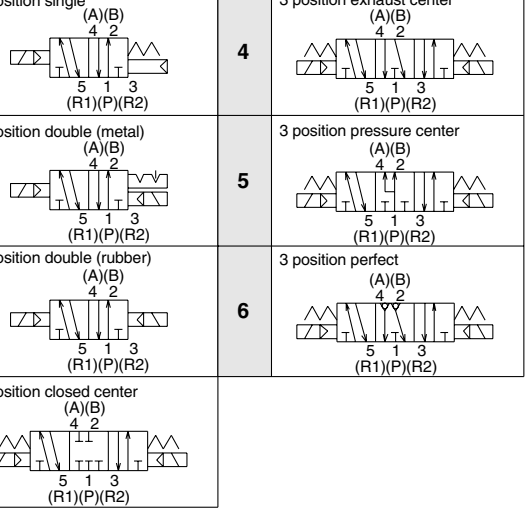
VQC 4 1 0 0 — 5

Series

4	VQC4000

Type of actuation

1	2 position single	4	3 position exhaust center
2	2 position double (metal)	5	3 position pressure center
	2 position double (rubber)	6	3 position perfect
3	3 position closed center		



Seal type

0	Metal seal
1	Rubber seal

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.

Coil voltage

5	24 VDC Note)
6	12 VDC

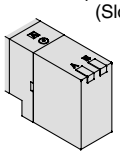
Note) S kit is only available for 24 VDC.

Light/Surge voltage suppressor

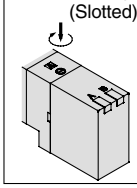
Nil	With
E	Without light, with surge voltage supressor

Manual override

Nil: Non-locking push type (Slotted)

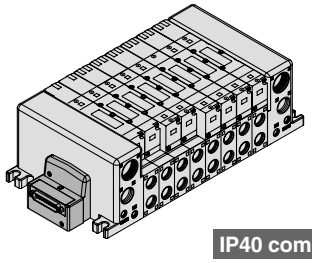


B: Locking type (Slotted)



Kit Designation/Electrical Entry/Cable Length

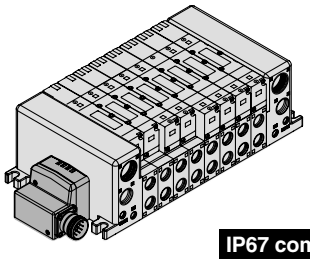
F **Kit (D-sub connector kit)**



IP40 compliant

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	

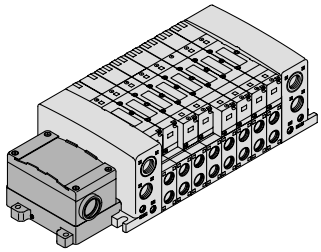
M **Kit (Multiple connector kit)**



IP67 compliant

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	

T **Kit (Terminal block box kit)**

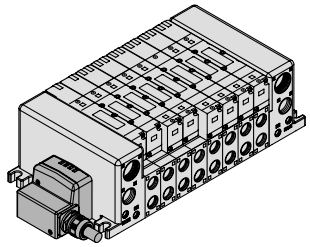


IP67 compliant

TD0	Terminal block box kit	1 to 10 stations (16 stations)

Note) P kit: when using the flat ribbon cable kit (20P), order cable assemblies separately.

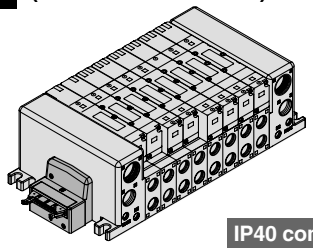
L **Kit (Lead wire kit)**



IP67 compliant

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 **Kit (Flat ribbon cable kit)**



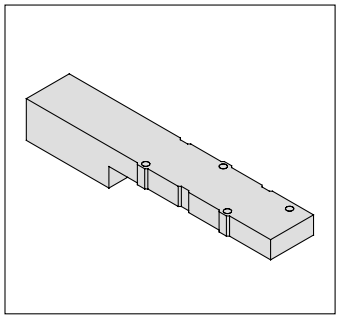
IP40 compliant

Note) For a 20P flat ribbon cable, the cable assembly must be ordered separately.

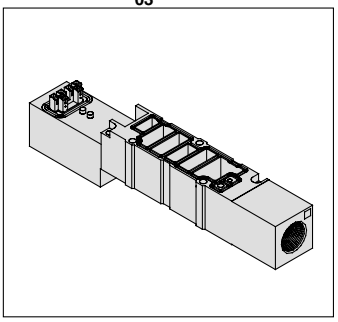
PD0	Flat ribbon cable kit (26P) without cable	1 to 12 stations (16 stations)
PD1	Flat ribbon cable kit (26P) with 1.5 m cable	
PD2	Flat ribbon cable kit (26P) with 3.0 m cable	
PD3	Flat ribbon cable kit (26P) with 5.0 m cable	
PDC	Flat ribbon cable kit (20P) without cable Note)	1 to 9 stations (16 stations)

Manifold Option

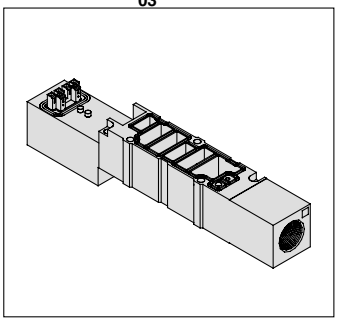
Blanking plate assembly
VVQ4000-10A-1



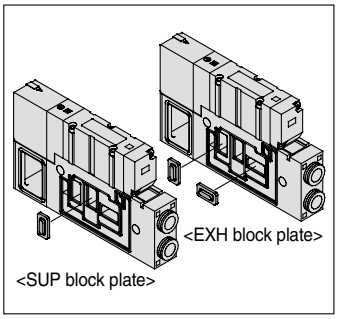
Individual SUP spacer
VVQ4000-P-1-$^{02}_{03}$



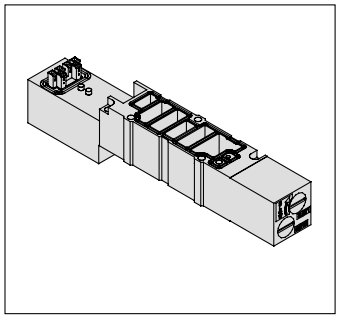
Individual EXH spacer
VVQ4000-R-1-$^{02}_{03}$



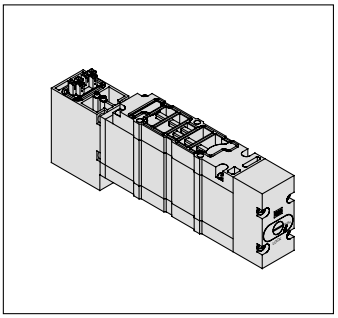
SUP/EXH block plate
VVQ4000-16A



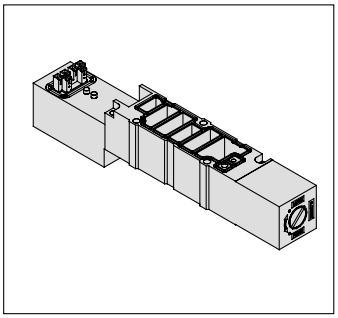
Throttle valve spacer
VVQ4000-20A-1



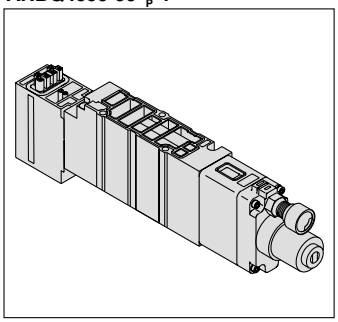
Residual pressure release valve perfect spacer
VVQ4000-25A-1 Note 1)



SUP stop valve spacer
VVQ4000-37A-1

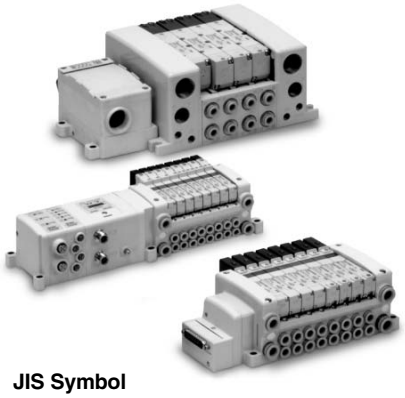


Interface regulator
ARBQ4000-00-$^{A}_{P}$-1



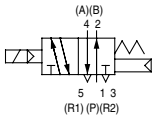
Note 1) Perfect spacers with residual pressure release valve cannot be combined with external pilot specifications.

Series VQC
Base Mounted
Plug-in Unit

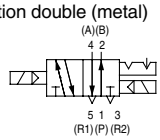


JIS Symbol

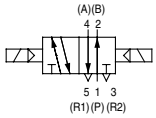
2 position single



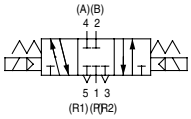
2 position double (metal)



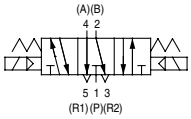
2 position double (rubber)



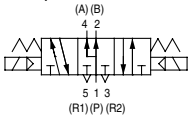
3 position closed center



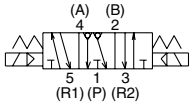
3 position exhaust center



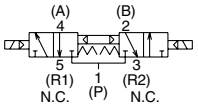
3 position pressure center



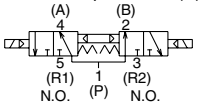
3 position exhaust center with pressure release valves



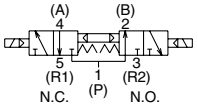
4 position dual 3 port valve (A)



4 position dual 3 port valve (B)



4 position dual 3 port valve (C)



Model

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

Note 1) Values represented in this column are in the following conditions:
VQC1000: Cylinder port size C6 without a back pressure check valve
VQC2000: Cylinder port size C8 without a back pressure check valve
VQC4000: Cylinder port size Rc 3/8

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

Standard Specifications

Valve specifications	Valve Configuration			Metal seal	Rubber seal
	Fluid			Air/Inert gas	
	VQC1000/2000	Max. operating pressure		0.7 MPa (High pressure type: 1.0 MPa) Note 4)	
		Min. operating pressure	Single	0.1 MPa	0.15 MPa
			Double	0.1 MPa	
			3 position	0.1 MPa	0.2 MPa
			4 position	—	0.15 MPa
	VQC4000	Max. operating pressure Note 3)		1.0 MPa (0.7 MPa)	
		Min. operating pressure	Single	0.15 MPa	0.2 MPa
			Double	0.15 MPa	
			3 position	0.15 MPa	0.2 MPa
	Proof pressure			1.5 MPa	
	Ambient and fluid temperature			–10 to 50°C Note 1)	
	Lubrication			Not required	
	Manual override			Push type/Locking type (tool required)/Locking type (Manual override) Note 5)/Slide locking type Note 5)	
	Impact resistance/Vibration resistance			150/30 m/s² Note 2)	
	Enclosure			Dust proof (IP67 compliant)	
Electrical specifications	Rated coil voltage			24 VDC	
	Allowable voltage fluctuation			±10% of rated voltage	
	Coil insulation type			Equivalent to B type	
	Power consumption (Current)		24 VDC	1 W DC (42 mA), 0.5 W DC (21 mA)	
			12 VDC	1 W DC (83 mA), 0.5 W DC (42 mA)	

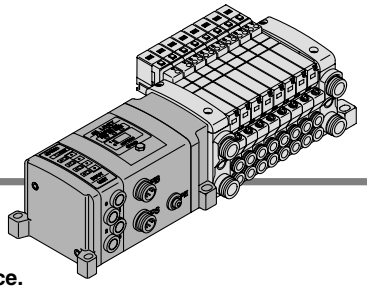
Note 1) Use dry air to prevent condensation at low temperatures.
Note 2) **Impact resistance:** No malfunction resulted from the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states.
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000Hz. Test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states.
Note 3) Values in ( ) are for the low wattage (0.5 W) specification.
Note 4) Metal seal type only.
Note 5) Only for VQC1000/2000.

Manifold Specifications

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

Note 1) One-touch fittings in inch sizes are also available.
Note 2) An optional specification for special wiring is available to increase the maximum number of stations.

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



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

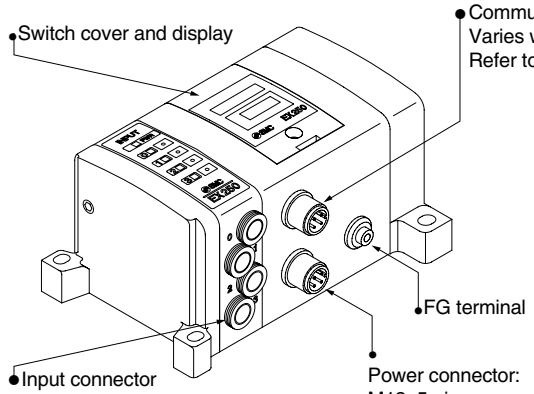
• The serial transmission system greatly reduces connection work, minimizes wiring, and saves space.

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

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

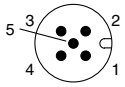
Input block
This expansion block connects to the SI unit and allows for sensor input to the auto switches.
Each input block can receive input from up to two or four sensors, and the common can be matched to the sensor by an NPN/PNP selector switch.
Input connectors are available in both M8 and M12 types.

Connector Details



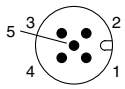
Communication connector
CANopen: Female connector cable: M12 female 5 pins cable with shield (according to ISO11898).

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



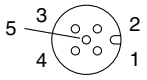
DeviceNet: M12...5 pins (Plug) Example for a cable set with plug / socket:
OMRON Corporation DCA1-5CN05F1. Karl Lumberg GmbH: 0935 253 103/...M, RSC RKC 57* ... M.
Accessories, bus branch Y: Karl Lumberg GmbH: 0906 UTP 101, Hans Turck GmbH: VB2-FKM-FSM57.
Accessories terminating socket with resistor: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

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

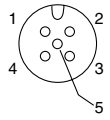


PROFIBUS-DP: M12... 5 pins reserve-keyed (Socket).Example for the corresponding cable sets with plug / socket:
Hans Turck GmbH: RSSW-RKSW456-...M; Karl Lumberg GmbH: 0975 254 101/...M
Accessories Bus branch Y: Hans Turck GmbH: VB2/FSW/FKW/FSW45
Accessories terminating resistor: Hans Turck GmbH: RSS4.5-PDP-TR;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

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



Circuit diagram Input module (EX250-IE*)
Input connection: M12 ... 5 pins (Socket)
Example for the cable side connection: OMRON Corporation XS2G;
Karl Lumberg GmbH: Series RST5; Franz Binder GmbH: Series 713,763

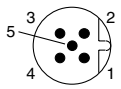


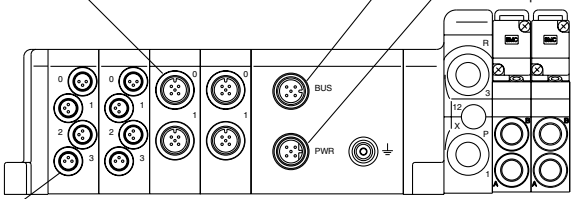
Pos.	Description	Function
1	SW+	Sensor power supply +
2	N.C (SIGNAL)	Open*
3	SW–	Sensor power supply –
4	SIGNAL	Sensor input signal
5	E	Sensor ground connection

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

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

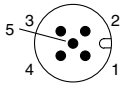
Pos.	Description	Function
1	SV24V	+24 V solenoid valve
2	SV0V	0V solenoid valve
3	SW24V	+24 V SI and input blocks
4	SW0V	0 V SI and input blocks
5	E	Ground connection





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

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



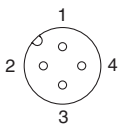
Input connection: M8 ... 3 pins (Socket)
Example for cable side connection: Franz Binder GmbH Series 718, 768
Karl Lumberg GmbH: Series RSMV3

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

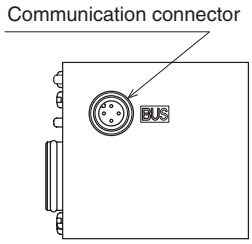
SMC

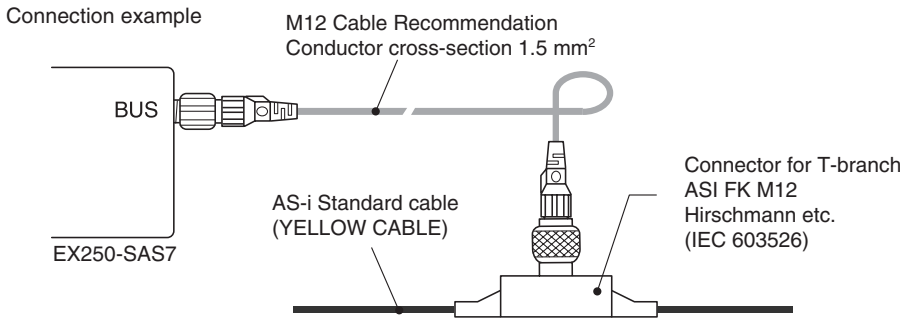
AS-i EX250-SAS7 / EX250-SAS9

Communication connector: M12 male 4 pins



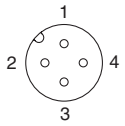
Pos.	Description	Function
1	AS-i +	Positive AS-Interface line
2	RESERVE	RESERVE
3	AS-i –	Negative AS-Interface line
4	RESERVE	RESERVE





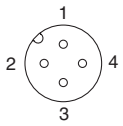
AS-i EX250-SAS3 / EX250-SAS5

Communication connector: M12 male 4 pins



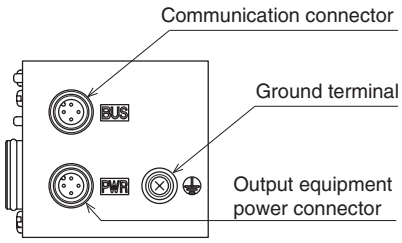
Pos.	Description	Function
1	AS-i +	Positive AS-Interface line
2	0V	Negative output equipment power line
3	AS-i –	Negative AS-Interface line
4	24V	Positive output equipment power line

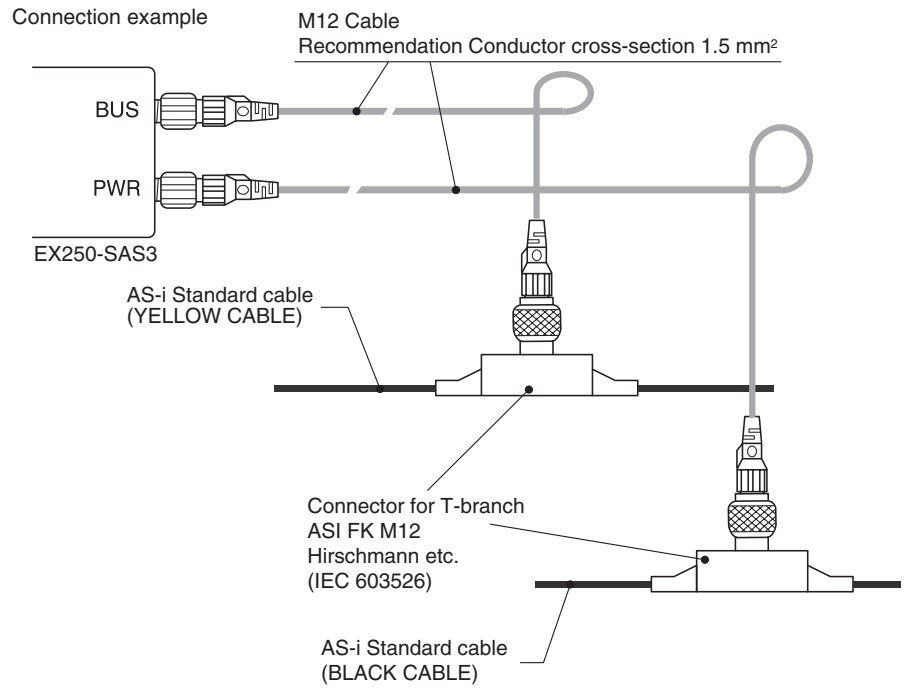
Output equipment power connector: M12 male 4 pins



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.

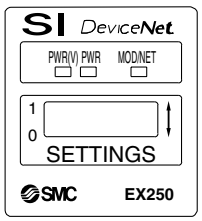




S VQC1000/2000/4000
Kit (Serial transmission kit) for I/O IP67 compliant

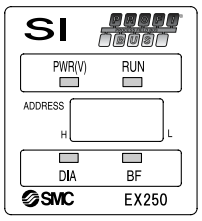
Indicator Unit (LED) Description and Its Function

■ SI unit
DeviceNet (EX250-SDN1)



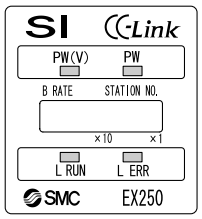
Name	Function
PWR(V)	ON when solenoid valve power supply is turned ON.
PWR	ON when DeviceNet circuit power supply input is turned ON.
MOD/NET	OFF: Power supply off, off line, or when checking duplication of MAC_ID.
	GREEN BLINKING: Waiting for connection (on line).
	GREEN ON: Connection established (on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

■ PROFIBUS-DP (EX250-SPR1)



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

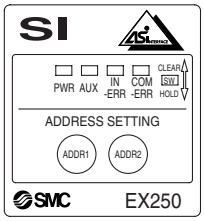
■ CC-Link (EX250-SMJ2)



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

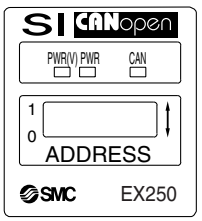
When the data link is normal, PW, PW (V) and L RUN are ON.

■ AS-i (EX250-SAS□)



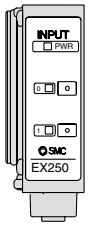
Name	LED Condition	Contents
PWR	Green Light	In time of power supply for AS-Interface line is turned on.
AUX	Green Light	In time of auxiliary power supply for output equipment is turned on.
IN-ERR	Red Light	In time of input power is detected over current. (Lights off at normal condition)
COM-ERR	Red Light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

■ SI unit
CANopen (EX250-SCA1)

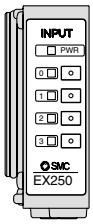


Name	LED Condition	Contents
PWR(V)	Green Light	Illuminates when power for solenoid valves is supplied
PWR	Green Light	Illuminates when power for CANopen line is supplied
CAN	Green Light	Illuminates when SI unit is in the Operational state
	Green Light (Blinking)	SI unit is in the Pre-operational state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

■ Input block (EX250-IE1/2/3)



2-input type (EX250-IE1)



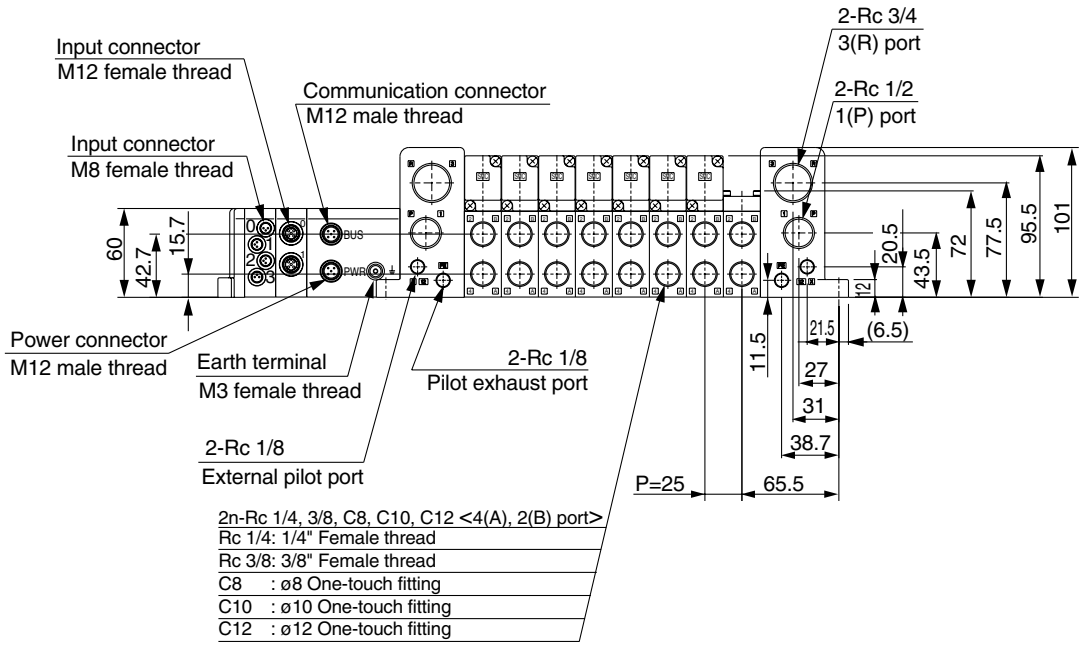
4-input type (EX250-IE2/3)

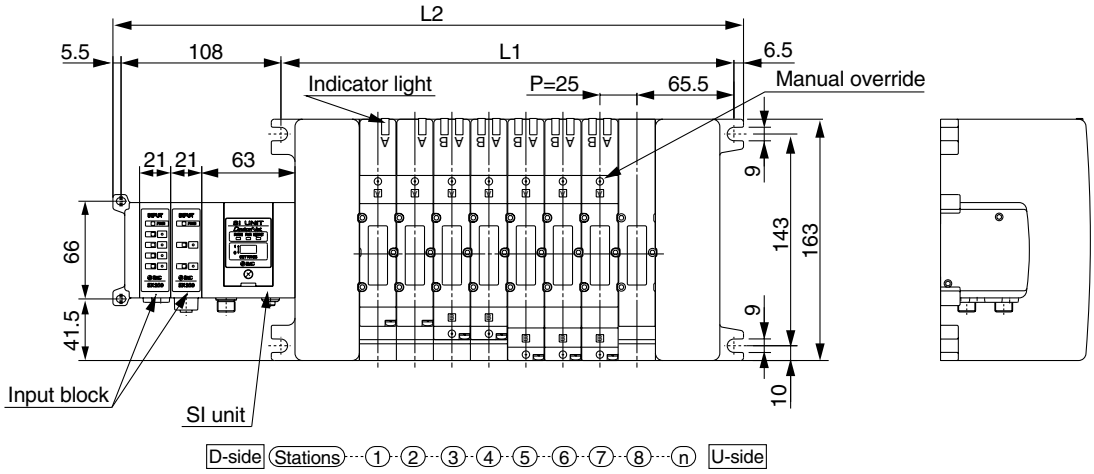
Description	Function
PWR	ON when sensor power is turned ON.
0 to 1(3)	ON when each sensor input goes ON.

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

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

VV5QC41
S Kit
(Serial transmission kit: EX250)



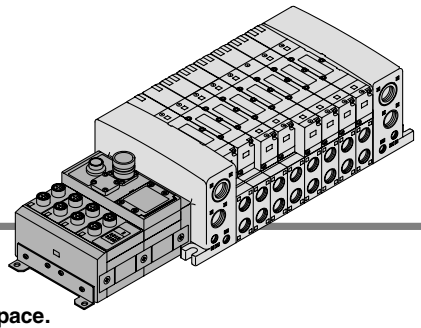


Formulas
L1 = 25n + 106 (Maximum 16 single wiring stations)
∗ L2: For one input block. Add 21 mm for each additional input block.

n: Stations

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

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



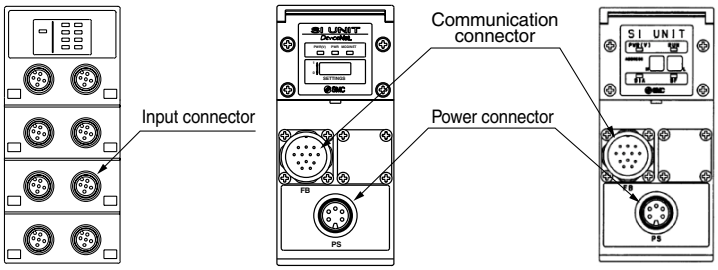
Compatible network DeviceNet/PROFIBUS-DP

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

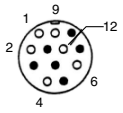
DeviceNet/PROFIBUS-DP compatible SI unit
As a DeviceNet/PROFIBUS-DP slave unit, this kit is capable of solenoid valve ON and OFF control up to 32 points.
Furthermore, by connecting an input block, up to 32 sensor signal inputs are possible.

Input block
This expansion block connects to the SI unit and allows for sensor input to the auto switches.
Each input block can receive input from up to 8 sensors, and the common can be matched to the sensor by an NPN/PNP selector switch.

Connector Details



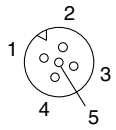
• Communication connector (PROFIBUS-DP): CONINVERS GmbH RC-2RS1N12, 12 pins
Cable side connector example: Siemens AG 6ES5 760-2CB11



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

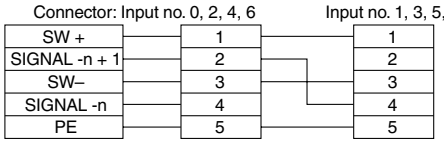
• Pin no. 3, 5, 7, 8, 10 and 11 marked with "●" are open.
∗ The connector configuration and the pin arrangement are compatible with Siemens AG ET200C.

• Input connector: M12, 5 pins (OMRON Corporation XS2F compatible) x 8 pcs.
Cable side connector example: OMRON Corporation XS2G

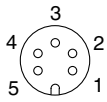


No.	Description	Function
1	SW +	(+) Sensor power supply
2	N.C.	Open∗
3	SW –	(–) Sensor power supply
4	SIGNAL	Sensor input signal
5	PE	Protective sensor ground

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

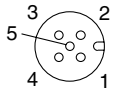


• Power connector: Franz Binder GmbH Series 723, 5 pins (72309-0115-80-05)
Cable side connector example: Franz Binder GmbH 72309-0114-70-15, etc.
∗ DIN type 5 pins



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

• Communication connector (DeviceNet): M12, 5 pins (for DeviceNet only)
Example of corresponding cable assemblies with connector:
OMRON Corporation DCA1-5CN05F1, Karl Lumberg GmbH & Co. KG RKT5-56.



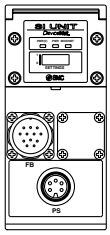
No.	Description	Function
1	Drain	Drain/Shield
2	V +	(+) Circuit power supply
3	V –	(–) Circuit power supply
4	CAN_H	Signal H
5	CAN_L	Signal L

Compatible with DeviceNet specification Micro Style connector.

⚠Caution
When IP65 or equivalent enclosures are required, install a waterproof cover on the input connector that is not being used. Order waterproof covers separately.
Example: OMRON Corporation XS2Z-12

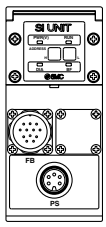
Indicator Unit (LED) Description and Its Function

■ SI unit (DeviceNet)



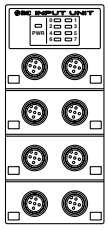
Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON.
PWR	ON when DeviceNet circuit power supply input is turned ON.
MOD/NET	OFF: Power supply off, off line, or when checking duplication of MAC_ID.
	GREEN BLINKING: Waiting for connection (on line).
	GREEN ON: Connection established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



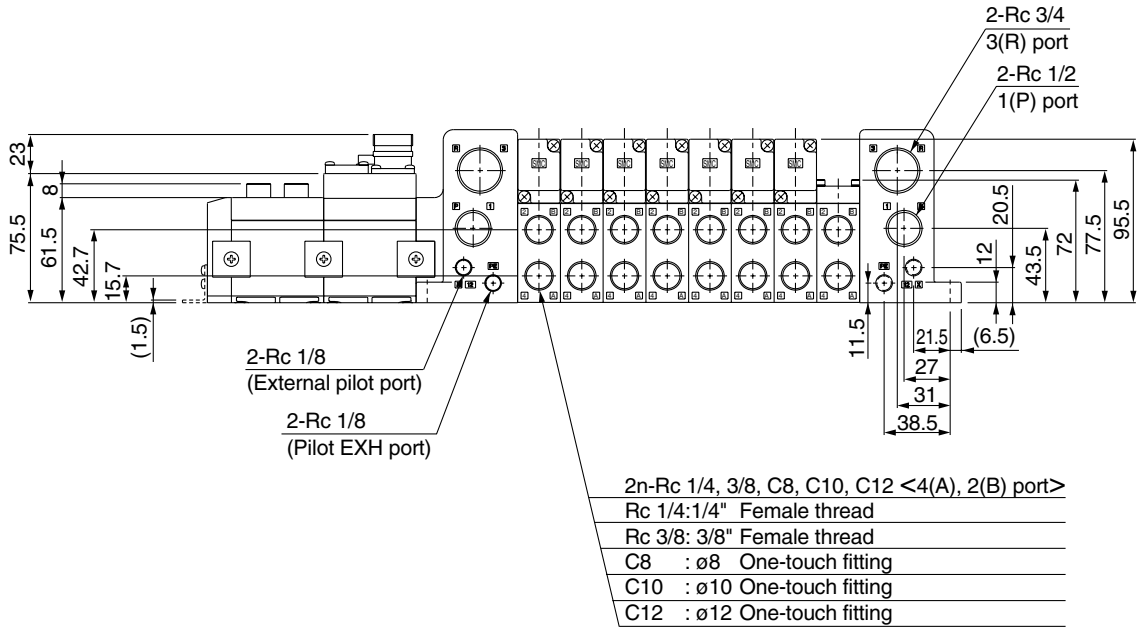
Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON. OFF when the power supply voltage is less than 19V.
RUN	ON when operating (SI unit power supply is ON).
DIA	ON when self diagnosis device detects abnormality.
BF	ON for BUS abnormality.

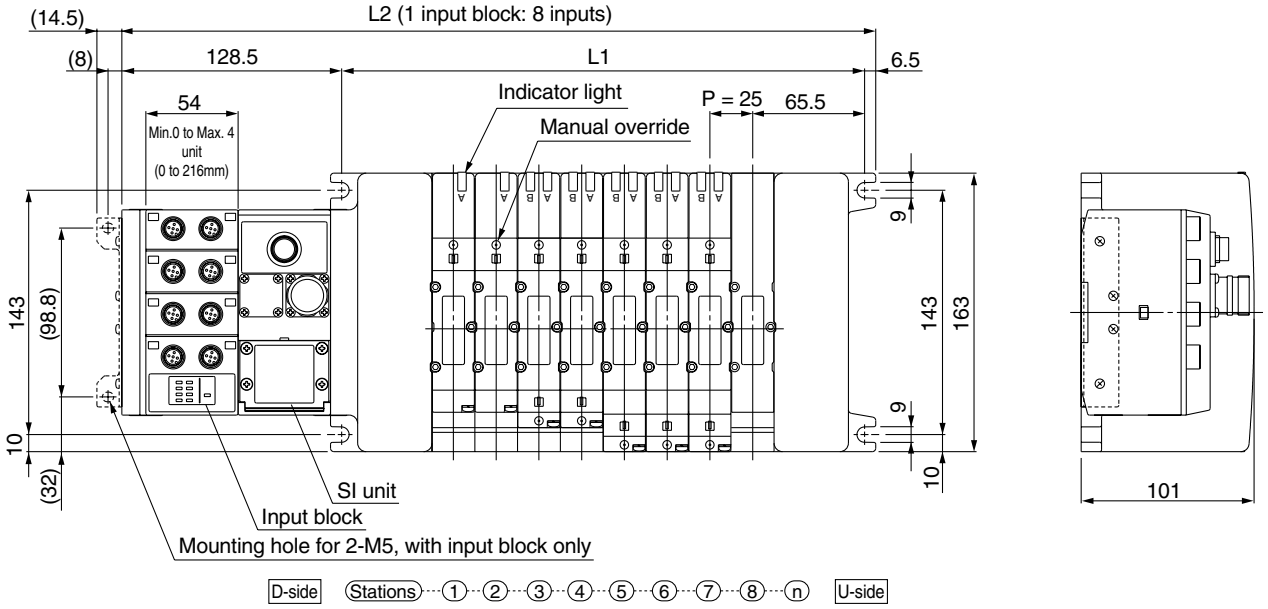
■ Input block



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)





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

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