



11 mm Pitch Manifold Vacuum Switching Unit

VSZPM Series



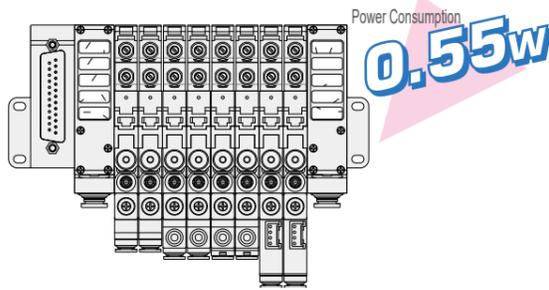
Compact and lightweight vacuum switching unit dedicated to manifolds (max 12 stations)

Centralized wiring for supply valve / breaking valve

Adoption of centralized wiring specification enables reduction of wiring work time.

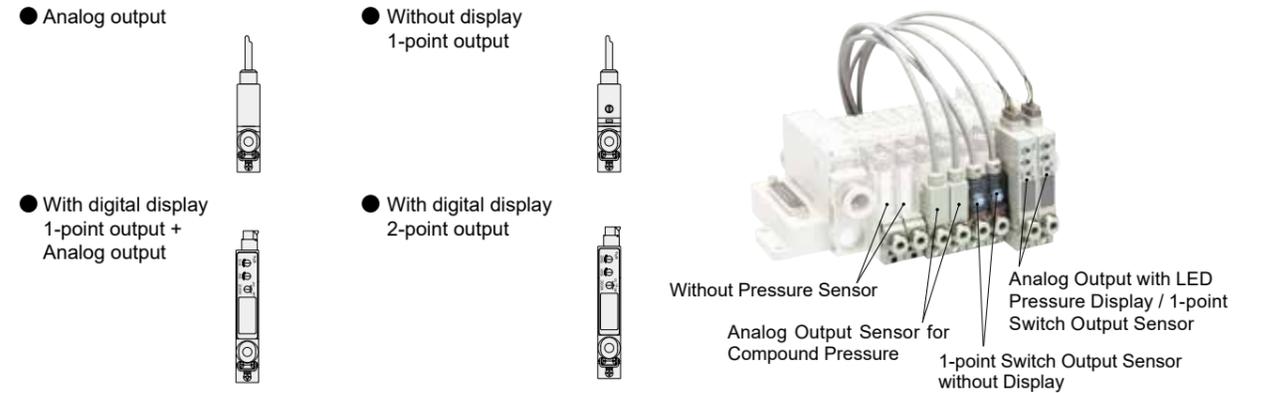


Valve power consumption reduced to 0.55 W, achieving energy saving.



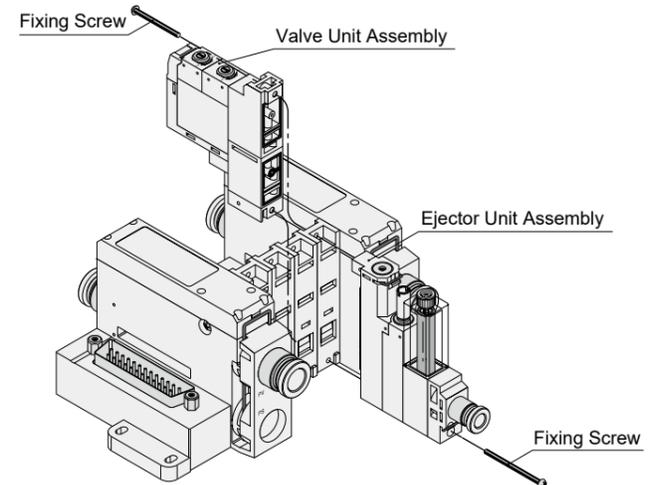
**Piping standardized with Push-in fitting and female thread specifications
Selection possible according to piping application**

**Various variations of vacuum pressure switches also available
Compatible with a wide range of applications**



Structure considering maintainability makes maintenance work easy

Since valves, filters, etc., are unitized, replacement is possible by removing only the necessary parts.

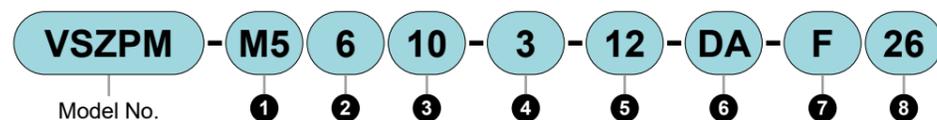


Compliant with Global Standards

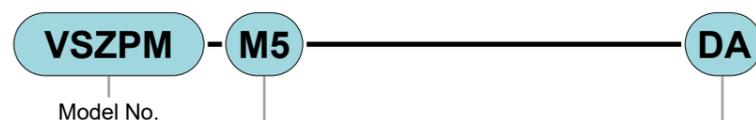


Model No. Notation

● 11 mm pitch manifold dedicated vacuum switching unit



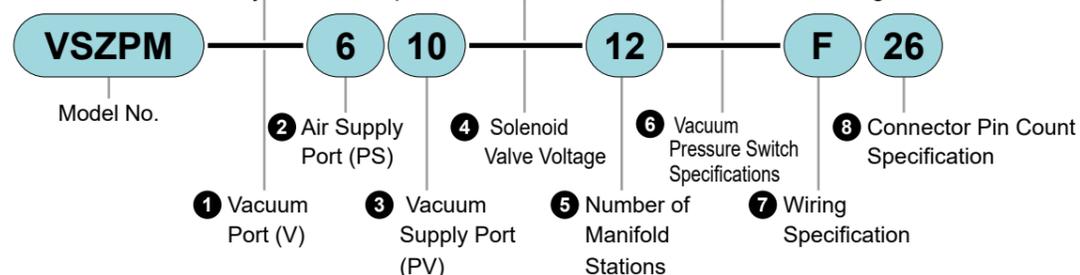
● Pump unit assembly for 11 mm pitch manifold dedicated vacuum switching unit



● Valve unit assembly for 11 mm pitch manifold dedicated vacuum switching unit



● Valve unit assembly for 11 mm pitch manifold dedicated vacuum switching unit manifold only



1 Vacuum Port (V)

Code	Content	Type			
		Manifold	Pump Unit Assembly	Valve Unit Assembly	Manifold Only
4	ø4 Push-in fitting	●	●		
6	ø6 Push-in fitting	●	●		
M5	M5×0.8	●	●		
CX	For Fitting Mix (Provide details in the specification sheet)	●			

*: For mixed specifications, Pages 404 and 405 øBe sure to fill in the "mix manifold specifications sheet".

3 Vacuum Supply Port (PV)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

*: For pump unit assembly and valve unit assembly, the vacuum supply port cannot be selected.

2 Air Supply Port (PS)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting

*: For pump unit assembly and valve unit assembly, the air supply port cannot be selected.

4 Solenoid Valve Voltage

Code	Content
3	24 VDC

*: For pump unit assembly and manifold only, the solenoid valve voltage cannot be selected.

5 Number of Manifold Stations

Code	Content
2	2 stations
to	t o
12	12 stations

*: For pump unit assembly and valve unit assembly, the number of manifold stations cannot be selected.

7 Wiring Specification

Code	Content	
F	Flat Cable Connector	
D	D-sub Connector	

*1: For pump unit assembly and valve unit assembly, the wiring specification cannot be selected.

*2: When 3 Connector Pin Count is '20' or '26', 7 'D' cannot be selected. When 3 Connector Pin Count is '25', 7 'F' cannot be selected.

6 Vacuum Pressure Switch Specifications

Code	Content	Type			
		Manifold	Pump Unit Assembly	Valve Unit Assembly	Manifold Only
Blank	Without Vacuum Pressure Switch	●	●		
DW	NPN Output 2 points with Digital Display	●	●		
DA	NPN Output 1 point + Analog Output with Digital Display	●	●		
S	NPN Output 1 point without Display	●	●		
V1	Analog Output for Negative Pressure	●	●		
R1	Analog Output for Compound Pressure	●	●		
Z	For Mixed Specifications (Provide details in the specification sheet)	●			

*: For mixed specifications, please be sure to fill out the 'Mixed Manifold Specification Sheet' on P. 404 and P. 405.

8 Connector Pin Count Specification

Code	Content
Blank	Connector with optimal pin count installed by our company
20	20-pin Flat Cable Connector (max. 9 stations)
26	26-pin Flat Cable Connector (max. 12 stations)
25	25-pin D-sub Connector (max. 12 stations)

*1: For flat cable connector:

Number of Manifold Stations	2 to 4 stations	10-pin Flat Cable Connector
	5 to 9 stations	20-pin Flat Cable Connector
	10 to 12 stations	26-pin Flat Cable Connector

For D-sub connector:

Number of Manifold Stations	2 to 4 stations	9-pin D-sub Connector (max. 9 stations)
	5 to 12 stations	25-pin D-sub Connector (max. 12 stations)

*2: For pump unit assembly or valve unit assembly, the connector pin count specification cannot be selected.

*3: When 8 is '20' or '26', Wiring Specification 7 'D' cannot be selected. When 8 is '25', Wiring Specification 7 'F' cannot be selected.

*4: For 5 '5' to '9', please select 'Blank'.

*5: For 5 '10' to '12', please select 'Blank'.

*6: For 5 '5' to '12', please select 'Blank'.

Maintenance Part Model No.

* For details on maintenance parts, please refer to P. 402.

● Filter Element



Model No.

Specifications

Item	VSZPM
Operating Fluid	Air
Operating Pressure MPa	0.3 to 0.7
Ambient Temperature/Fluid Temperature °C	5 to 50
Vacuum pressure kPa	-100 to 0

Solenoid Valve Specifications

●Pilot Valve

Item	Vacuum Supply Valve	Vacuum Breaking Valve
Valve-type and Operation Method	Direct acting poppet valve	
Rated Voltage V	24 VDC	
Allowable Voltage Fluctuation RangeV	21.6 DC to 26.4 DC	
Surge Protection Circuit	Varistor	
Power consumption W	0.55 (with LED)	
Operation Indicator Light	When coil is energized: Red LED lights up	When coil is energized: Yellow-green LED lights up
Manual Operation	Push & Lock type	
Wiring Method	D-sub Connector, Flat Cable Connector	

●Switching valve

Item	Vacuum Supply Valve	Vacuum Breaking Valve
Valve-type and Operation Method	Pilot operated poppet valve	
Valve Function	Single	
Valve-type	Normally Closed	
Proof Pressure MPa	1.05	
Lubrication	Not required	
Effective Area mm ² (Cv value)	4.5 (0.24)	3.5 (0.19)

Vacuum Pressure Switch Specifications

Item	With Digital Display		No Display	Separate-type	Analog	
	2-point Switch Output	1-point Switch Output	1-point Switch Output	Pressure Indicator with Switch		
Current ConsumptionmA	40		20	50	20	
Pressure Sensing Element	Diffused Semiconductor Pressure Sensor			-	Diffused Semiconductor Pressure Sensor	
Working pressure kPa	-100 to 0			-	-100 to 0	
Set Pressure	-99 to 0 kPa			-999 to 999 counts	-	
Proof Pressure MPa	0.2			-	0.2	
Storage Temperature °C	-20 to 80			-20 to 70		
Operating Temperature °C	0 to 50		-10 to 60	-10 to 50	-10 to 60	
Operating Humidity	35 to 85% RH					
Power Supply Voltage V	DC 12 to 24 ±10% Ripple (P-P) ≤ 10%			DC 10.8 to 30 (incl. ripple)		
Protection Structure	Equivalent to IEC Standard IP40					
Number of Switch Output Points	2	1	1	2	-	
Repeatability	±0.3% F.S. Max. (at Ta = 25°C)				-	
Differential	Fixed	Variable	Fixed	Variable	-	
Switch Output	NPN Transistor Open Collector Output					
Analog Output	Output VoltageV	-	1 to 5	-	1 to 5	
	Zero Point VoltageV	-	1±0.1	-	1±0.1	
	Span Voltage V	-	4±0.1	-	4±0.1	
	Output CurrentmA	-	≤ 1	-	≤ 0.5	≤ 1
	Differential/Hysteresis	-	±0.5% F.S. Max.	-	±0.5% F.S. Max.	
Display	-99 to 0 kPa (2-digit Red LED display)		-	3-digit Red LED display	-	
Display Update Rate	Approx. 4 times/sec		-	Approx. 4 times/sec	-	
Display Accuracy	±3% F.S. ±2 digit		-	±1% F.S.	-	
Resolution	1 digit		-	1 digit	-	
Switch Operation	SW1: Red LED lights up when output is ON					
Indicator Light	SW2: Green LED lights up when output is ON	-	-	SW2: Red LED lights up when output is ON	-	

Vacuum Breaking Function

Item	Vacuum Break Valve
Break Air Flow Rate L/min (ANR)	0 to 50 (at 0.5 MPa supply)

Vacuum Filter Specifications

Item	Vacuum Filter
Element Material	Polyvinyl formal
Filtration Rating μm	10
Filtration area mm ²	660

Vacuum Components

Vacuum Pump System

VSJP/VSJPM

VSNP/VSNPM

VSXP/VSXPM

VSQP

VSZPM

Vacuum Components

Vacuum Pump System

VSJP/VSJPM

VSNP/VSNPM

VSXP/VSXPM

VSQP

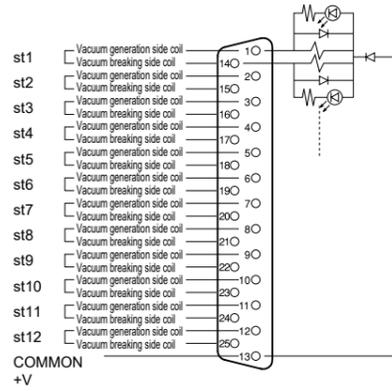
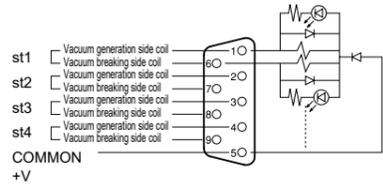
VSZPM

Electrical Circuit (Solenoid Valve)

MEMO

●D-sub Connector 9-pin

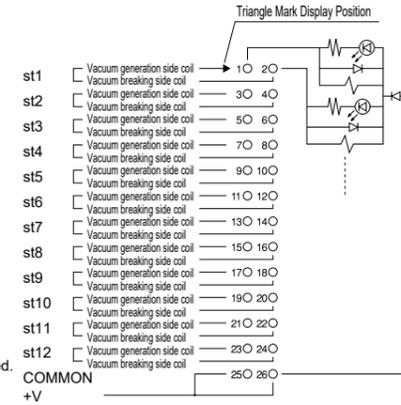
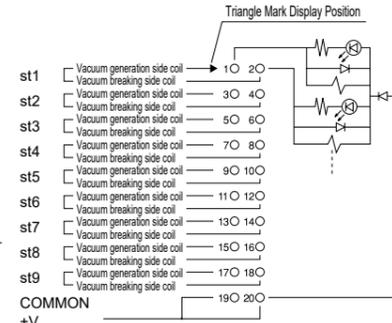
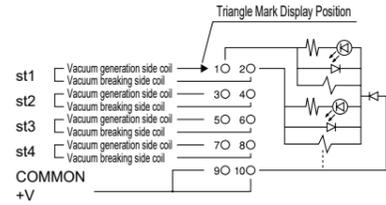
25-pin



●Flat Cable Connector 10-pin

20-pin

26-pin

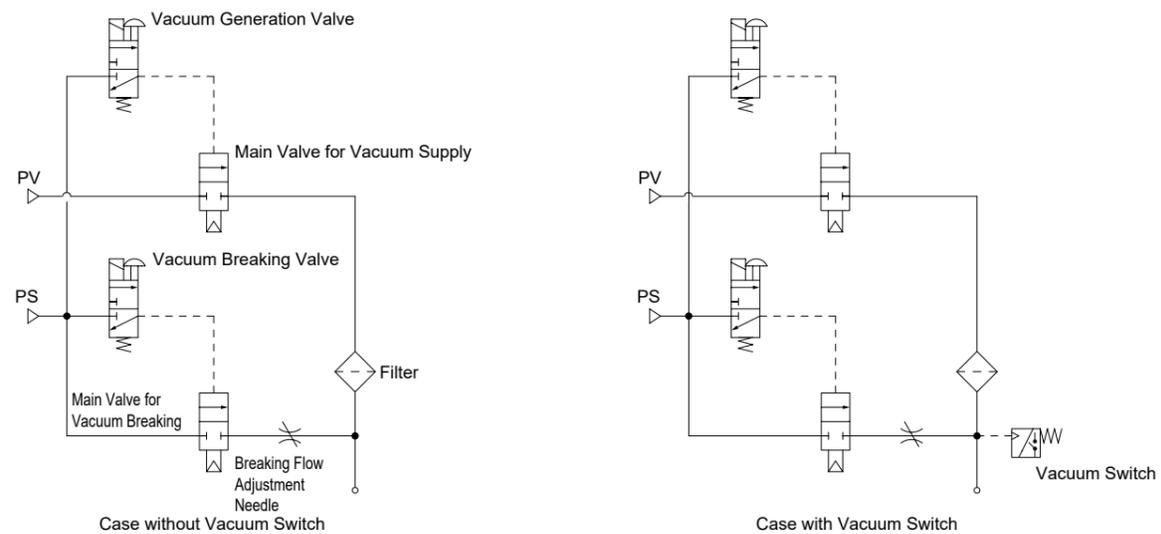


(Note) COMMON(+V) pins No. 9 and 10 are internally shorted.

(Note) COMMON(+V) pins No. 19 and 20 are internally shorted.

(Note) COMMON(+V) pins No. 25 and 26 are internally shorted.

Circuit Diagram



Vacuum Components
Vacuum Pump System

Vacuum Components
Vacuum Pump System

VSJP/
VSJPM

VSJP/
VSJPM

VSNP/
VSNPM

VSNP/
VSNPM

VXSP/
VXSPM

VXSP/
VXSPM

VSQP

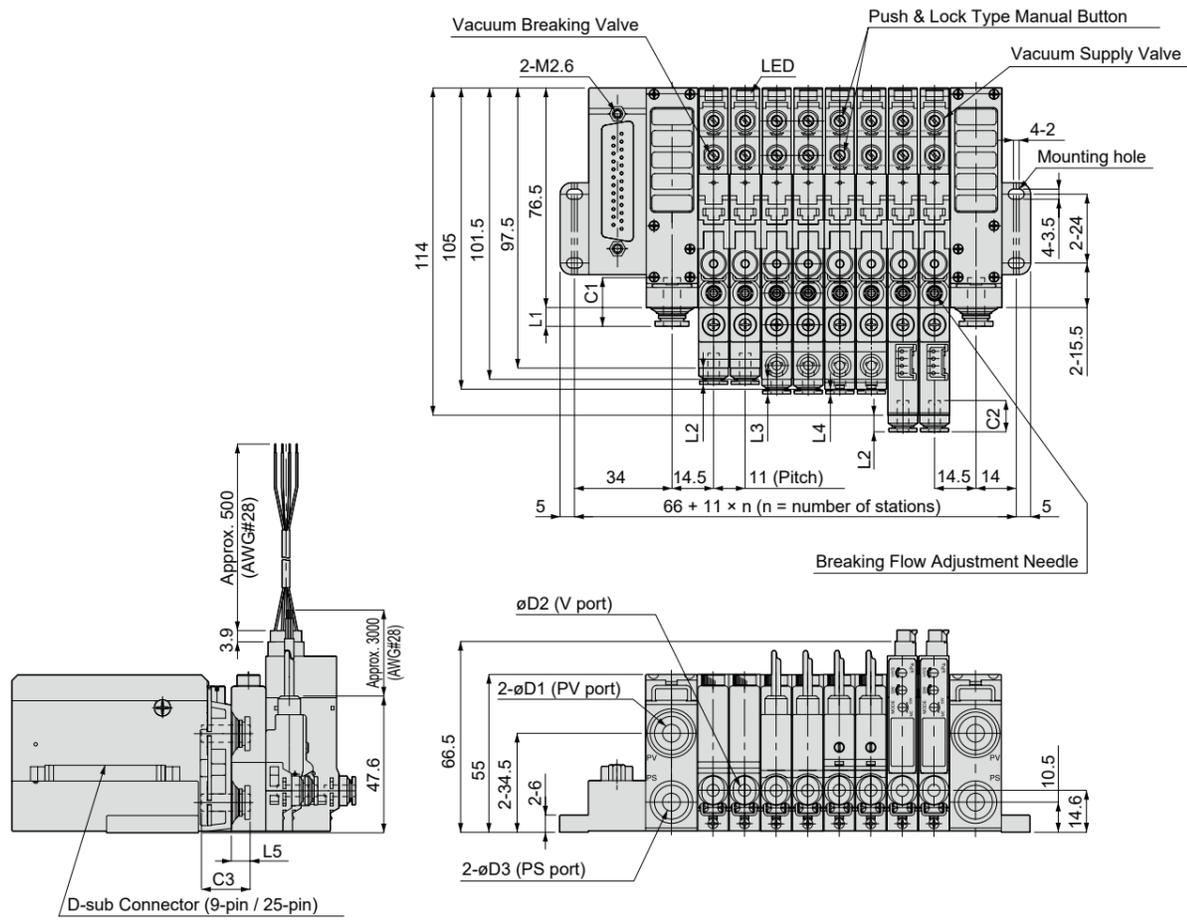
VSQP

VSZPM

VSZPM

External Dimension Drawings

●D-sub Connector Specification



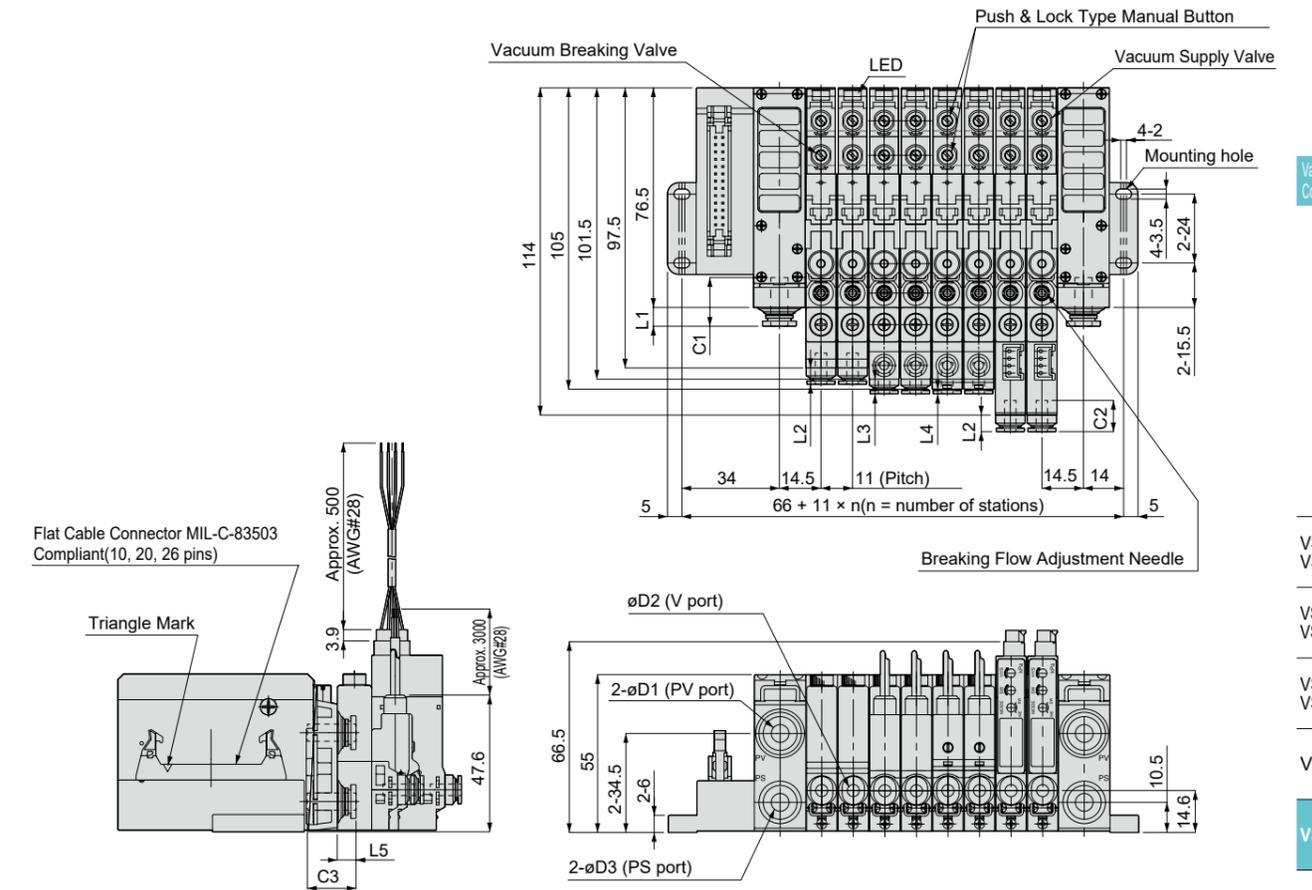
Unit: mm

PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4	PS Port øD3	C3	L5
6	17	6.6	4	11.2	6.1	5.4	1.9	4	14.9	2
8	18.2	8.1	6	10	8.9	8.2	4.7	6	17	6.6
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2	8	18.2	8.1

External Dimension Drawings

External Dimension Drawings

●Flat Cable Connector Specification



Unit: mm

PV Port øD1	C1	L1	V Port øD2	C2	L2	L3	L4	PS Port øD3	C3	L5
6	17	6.6	4	11.2	6.1	5.4	1.9	4	14.9	2
8	18.2	8.1	6	10	8.9	8.2	4.7	6	17	6.6
10	20.7	11.7	M5 (Female thread)	-	4	3.3	-0.2	8	18.2	8.1

Vacuum Components
Vacuum Pump System

VSJP/
VSJPM

VSNP/
VSNPM

VSXP/
VSXPM

VSQP

VSZPM

Vacuum Components
Vacuum Pump System

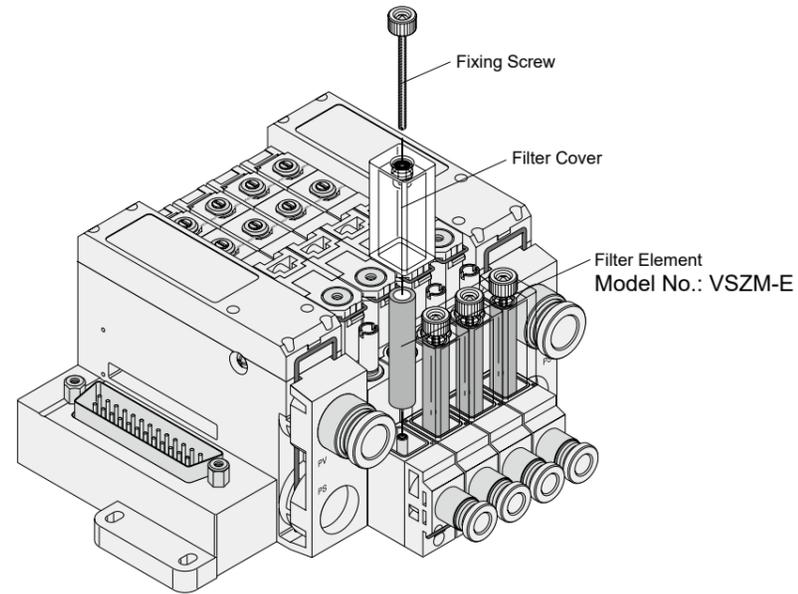
VSJP/
VSJPM

VSNP/
VSNPM

VSXP/
VSXPM

VSQP

VSZPM



Pneumatic Components

To Use This Product Safely

Be sure to read this before use.

For general pneumatic components precautions, Intro Page 15 for details.

Individual Precautions: 11 mm Pitch Manifold Dedicated Type VSZPM Series

Design / Selection

Warning

■The vacuum switching unit (VSZP) allows leakage. Hence, take other safety measures if vacuum retention for long periods is required.

Caution

■Manifold silencer specification may cause performance degradation and trouble due to element clogging. Perform periodic maintenance inspections.

■Depending on usage conditions, the manifold may undergo deterioration of vacuum performance or trouble. Hence, fully understand the manifold safety precautions in this catalog before use.

■When all units are not operated at the same time, the ejector exhaust of the operating unit leads to the vacuum port of the stopped unit. If exhaust flow-around poses a problem, please consult us.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Equipment Product Site(<https://www.ckd.co.jp/kiki/en/>) → 'model No.' → [Instruction Manual](#)

How to Create VSZPM Mixed Manifold Specification Sheet

● Mix manifold model No.(example)

VSZPM - ¹CX - ²6 - ³8 - ⁴3 - ⁵5 - ⁶Z - ⁷F - ⁸26

● Mix manifold specifications sheet(example)

Vacuum Switching Unit Model No. ¹ ⁶	Arrangement Position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
VSZPM-6-DW	○	○											2
VSZPM-6-DA			○		○								2
VSZPM-4-				○									1
VSZPM--													
VSZPM--													

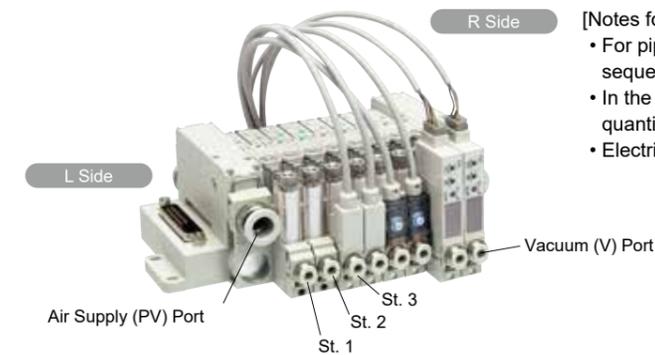
[For Fitting Mix Specification with Output Port Size Only]

● Mix manifold model No.(example)

VSZPM - ¹CX - ²6 - ³6 - ⁴3 - ⁵5 - ⁶DW - ⁷F - ⁸26

● Mix manifold specifications sheet (example)

Vacuum Switching Unit Model No. ¹ ⁶	Arrangement Position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
VSZPM-M5-DW	○	○											2
VSZPM-6-DW			○		○								2
VSZPM-4-DW				○									1
VSZPM--													
VSZPM--													



[Notes for Filling Out]

- For piping position, place the vacuum port at the front and install sequentially from the left.
- In the Required Quantity column at the right end of the table, enter the total quantity of the specified product model No.s.
- Electrical connector assembly is fixed on the L side of the manifold.

VSZPM Mixed Manifold Specification Sheet

Contact Person _____ Quantity Set _____ Delivery Date (Month/Day) _____ Date of Issue _____
 Voucher No. _____ Order Received No. _____ Company _____
 Attn: _____
 Order No. _____

● Mix manifold model No.

VSZPM - ¹ - ² - ³ - ⁴ - ⁵ - ⁶ - ⁷ - ⁸

① Vacuum Port (V)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
M5	M5×0.8
CX	For fitting mix (Provide details in the specification sheet)

② Air Supply Port (PS)

Code	Content
4	ø4 Push-in fitting
6	ø6 Push-in fitting
8	ø8 Push-in fitting

③ Vacuum Supply Port (PV)

Code	Content
6	ø6 Push-in fitting
8	ø8 Push-in fitting
10	ø10 Push-in fitting

④ Solenoid Valve Voltage

Code	Content
3	24 VDC

⑤ Number of Manifold Stations

Code	Content
2 to 12	2 stations to 12 stations

⑥ Vacuum Pressure Switch Specifications

Code	Content
Blank	Without Vacuum Pressure Switch
DW	NPN Output 2 points with Digital Display
DA	NPN Output 1 point + Analog Output with Digital Display
S	NPN Output 1 point without Display
V1	Analog Output for Negative Pressure
R1	Analog Output for Compound Pressure
Z	For mixed specifications (Provide details in the specification sheet)

⑦ Wiring Specification

Code	Content
F	Flat Cable Connector
D	D-sub Connector

⑧ Connector Pin Count Specification

Code	Content
Blank	For Flat Cable Connector Specification 2 to 4 stations 10-pin 5 to 9 stations 20-pin 10 to 12 stations 26-pin For D-sub Connector Specification 2 to 4 stations 9-pin 5 to 12 stations 25-pin
20	20-pin Flat Cable Connector (max. 9 stations)
26	26-pin Flat Cable Connector (max. 12 stations)
25	25-pin D-sub Connector (max. 12 stations)

● Mix manifold specifications sheet

Vacuum Switching Unit Model No. ¹ ⁶	Arrangement Position												Quantity
	1	2	3	4	5	6	7	8	9	10	11	12	
VSZPM--													
VSZPM--													
VSZPM--													
VSZPM--													
VSZPM--													