

Vacuum switching unit ideal for controlling large flow rate vacuum pressure

VSQP Series



Features

- 31.5mm width vacuum unit ideal for large flow rate control.
- A wide range of vacuum supply valves (normally open, normally closed) are available.
- An easy-to-read 2-screen digital display pressure sensor is available for the pressure sensor.
- The minus common specification can be selected when the minus side of the power supply is used as a common reference potential.

Specifications

Descriptions	VSQP
Working fluid	Air
Working pressure MPa	0.3 to 0.7
Ambient/fluid temperatures °C	5 to 50
Vacuum pressure kPa	-100 to 0

Solenoid valve specifications

● Pilot valve

Descriptions	Pilot valve	
Valve and operation	Direct acting poppet valve	
Rated voltage V	24 DC	100 VAC
Voltage fluctuation range V	24 DC±10%	100 AC±10%
Surge suppressor	Varistor	Bridge diode
Power consumption	0.55 W	1VA
Manual override	Push locking	
Operation display	At coil excitation operation: Red LED lights	

● Switching valve

Descriptions	Vacuum supply valve	Vacuum break valve
Valve and operation	Pilot operated poppet valve	
Valve	Normally closed, normally open	Normally closed
Lubrication	Not required	
Effective cross-sectional area mm ² (Cv)	16.5 (0.89)	3.5 (0.19)

Vacuum pressure switch specifications

Descriptions		Vacuum pressure switch	
		NPN output (R)	PNP output (RP)
Working pressure	kPa	-100 to 100	
Proof pressure	kPa	500	
Environmental resistance	Ambient temperature (in storage) °C	-10 to 60 (no condensation or freezing)	
	Ambient temperature (in use) °C	0 to 50 (no condensation or freezing)	
	Ambient humidity (in storage/in use)	35 to 85% RH (no condensation)	
	Degree of protection	IEC standards IP40 or equivalent	
Power supply voltage	V	12 to 24 DC±10% ripple (P-P) ±10% or less	
Current consumption	mA	40 or less (no load)	
Pressure display	Display frequency	5 cycles/second	
	Display accuracy	±2%F.S. ±1digit	
	Digital display	Main display: 2 colors (red, sub-display: orange)	
Switch output	No. of output points	2 points	
	Output method	NPN open collector	PNP open collector
	Switch rating	30 VDC, 125 mA or less	
	Internal voltage drop	1.5 V or less	
Temperature characteristics		±2%F.S. or less (0 to 50°C, at25°C)	
Repeatability		±0.2%F.S. ±1digit	
Hysteresis		Adjustment is possible	
Responsivity		Selectable (50/250/500/1000/2000/3000 ms)	

Vacuum pump system

VSJP
VSJPM

VSNP
VSNPM

VSXP
VSXPM

VSQP

VSZPM

Vacuum filter specifications

Descriptions	Vacuum filter
Element material	PVF (Polyvinyl formal)
Filtration rating μm	10
Filtration area mm ²	1507
Replacement filter element model No.	VSQ-E

Vacuum burst function

Descriptions	Vacuum burst function
Break air flow rate l/min (ANR)	0 to 50 (at supply pressure 0.5 MPa)

Valve lead wire color

Descriptions	Black	Gray	Blue	Brown
24 VDC plus common specifications	Vacuum generation (-)	Vacuum burst (-)	- (*1)	24 VDC (+common)
24 VDC minus common specifications	Vacuum generation (+)	Vacuum burst (+)	- (*1)	0V (-common)
100 VAC specifications	Vacuum generation (-)	Vacuum burst (-)	- (*1)	common

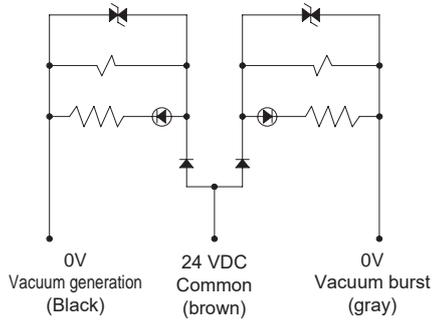
*1: For this model, the attached blue lead wire is not used.

Electric circuit (solenoid valve)

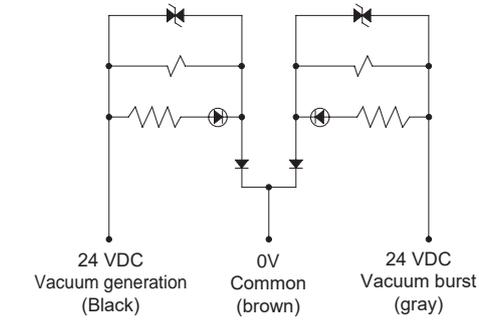
● 24 VDC

● 100 VAC

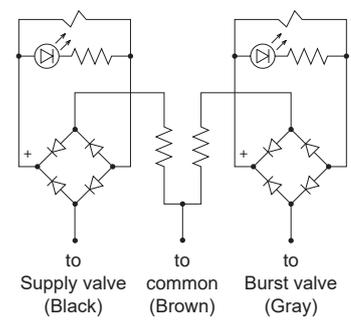
Vacuum pump system



Plus common specifications



Minus common specifications

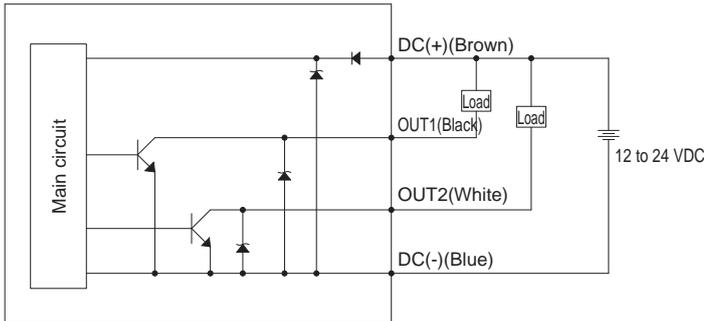


VSJP
VSJPM

Vacuum pressure switch electric circuit diagram

VSNP
VSNPM

■ NPN open collector output

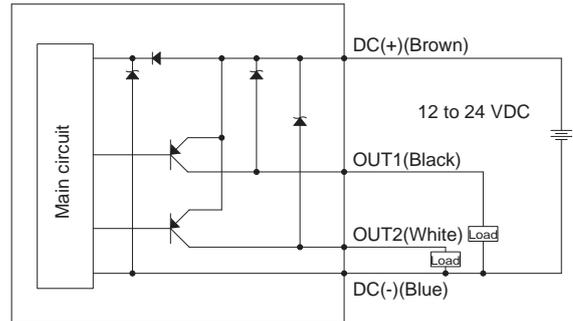


VSXP
VSXPM

VSQP

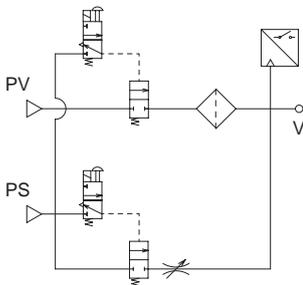
VSZPM

■ PNP open collector output



Circuit diagram

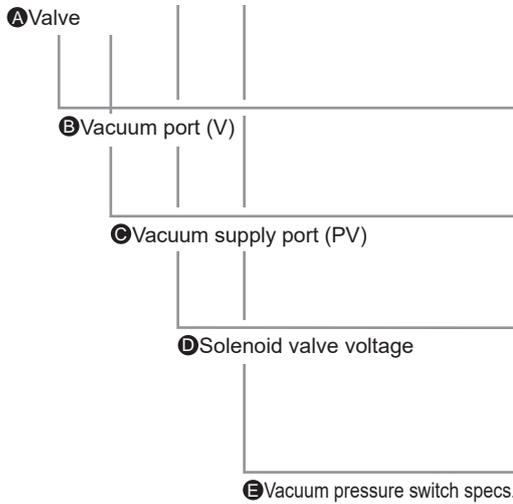
● Normally closed



How to order

- 31.5mm width discrete dedicated vacuum switching unit

VSQP - B 10 10 - 3 - R



Code	Description
A Valve	
A	Normally open (NO)
B	Normally closed
B Vacuum port (V)	
10	ø10 push-in fitting
12	ø12 push-in fitting
C Vacuum supply port (PV)	
10	ø10 push-in fitting
12	ø12 push-in fitting
D Solenoid valve voltage	
1	100 VAC
3	24 VDC (plus common specifications)
3MC	24 VDC (minus common specifications)
E Vacuum pressure switch specifications	
Blank	Without vacuum pressure switch
R	With digital display, NPN output 2 points
RP	With digital display, PNP output 2 points

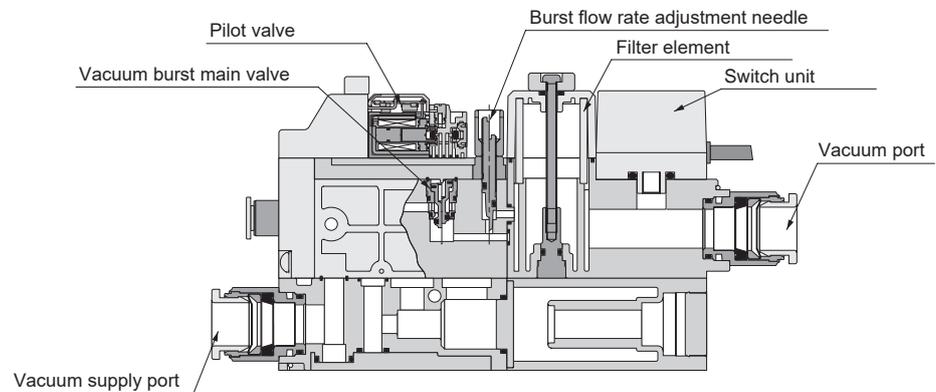
- Maintenance part model No.

• Filter element

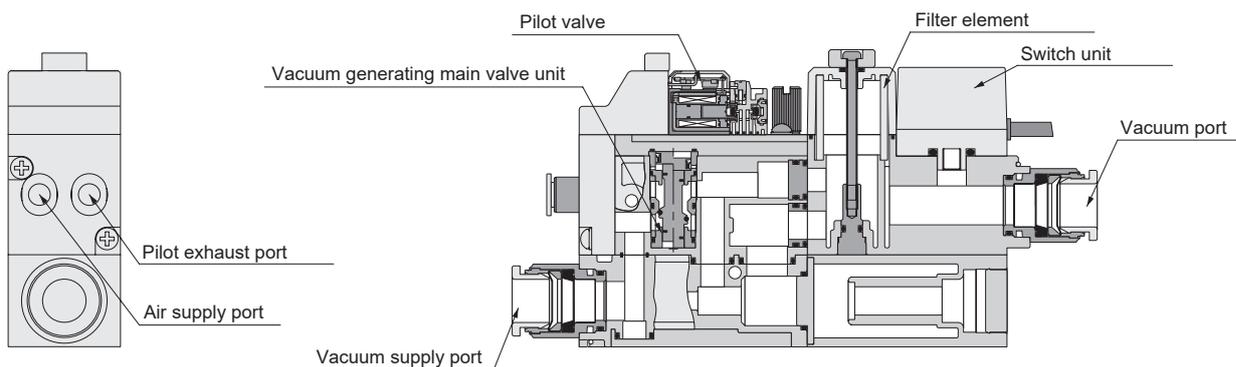
VSQ-E

Internal structure

- Burst circuit

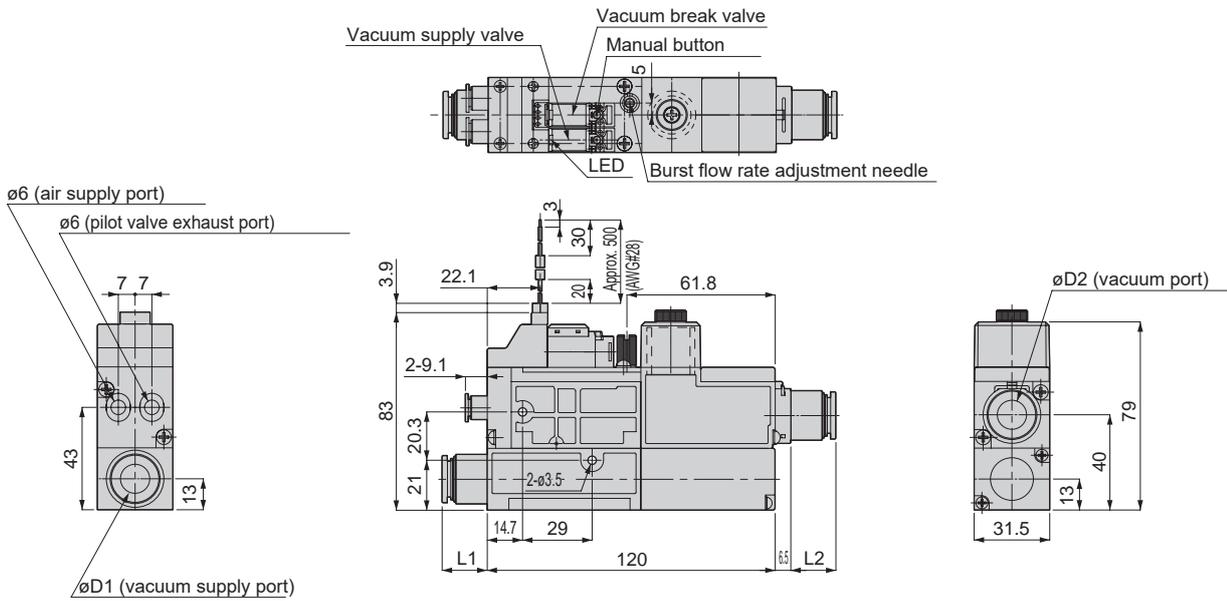


- Vacuum circuit



Dimensions

● Without vacuum pressure switch



Unit: mm

	Tube O.D. øD1	L1	Tube O.D. øD2	L2
Air supply port	10	14.7	-	-
	12	18.8	-	-
Vacuum port	-	-	10	14.7
	-	-	12	18.8

Vacuum pump system

VSJP
VSJPM

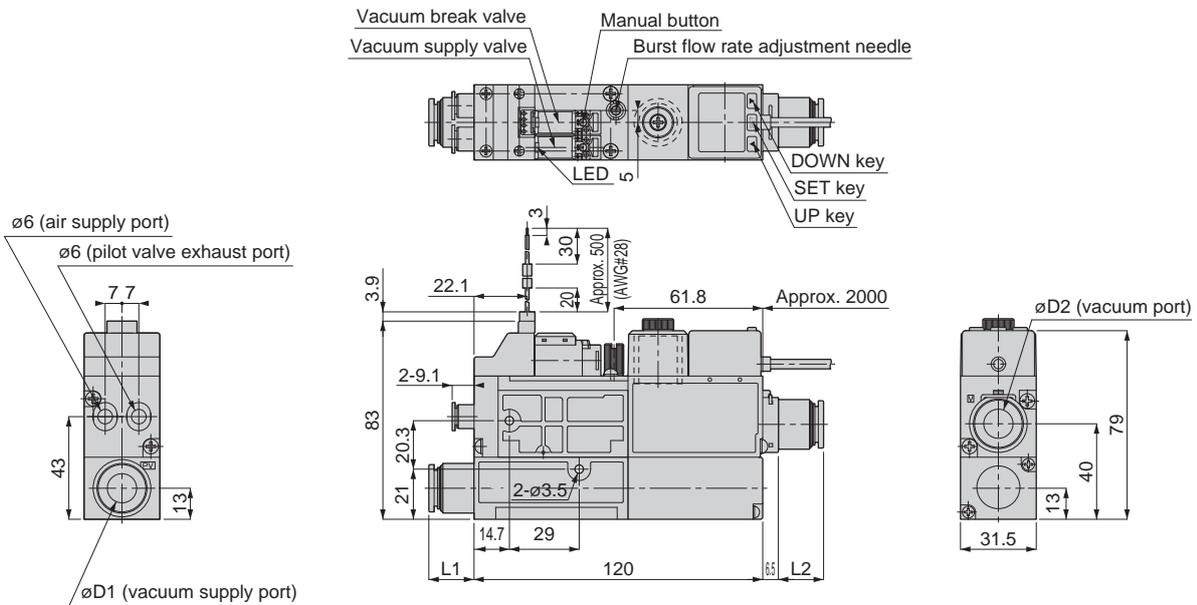
VSNP
VSNPM

VXSP
VXSPM

VSQP

VSZPM

● With vacuum pressure switch and digital display



Unit: mm

	Tube O.D. øD1	L1	Tube O.D. øD2	L2
Air supply port	10	14.7	-	-
	12	18.8	-	-
Vacuum port	-	-	10	14.7
	-	-	12	18.8