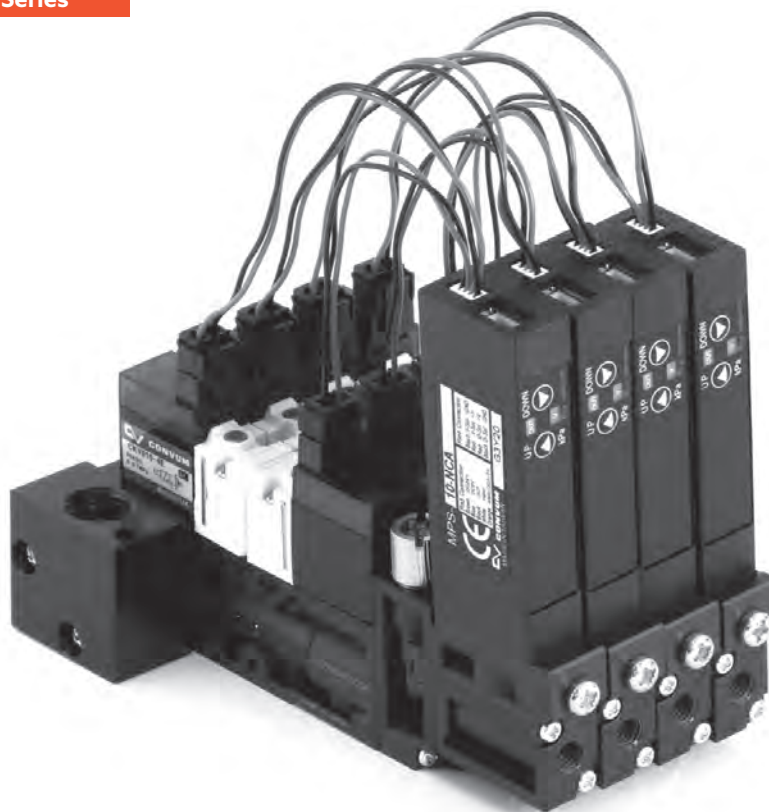


High Speed CONVUM

RoHS



All-in-One Unit

Blow-off flow adjustment needle

Blow-off valve

Pressure sensor

Vacuum generation valve

Filter

Height 77.5mm

Length 92.8mm

Width 10mm

※ MPS-10 mounted

Compact, light weight

● Weight 53g (Single unit/without sensor)

● Width 10mm

● Resin body

※ The photograph is with MPS-10

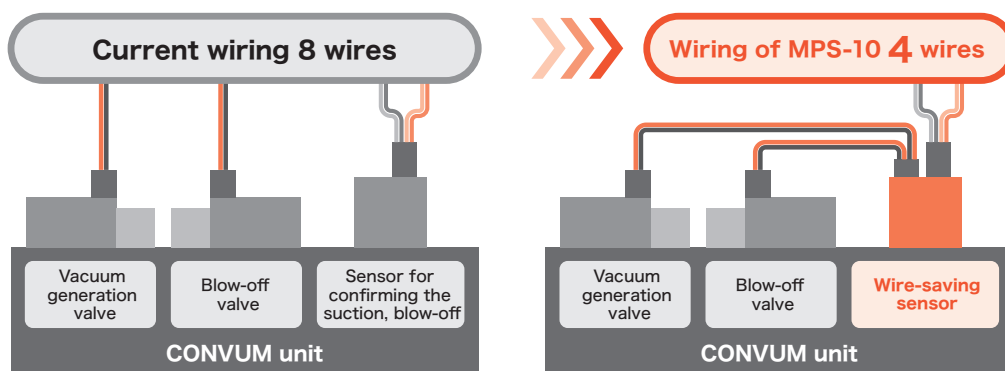
Quick response

- Vacuum response time **20_{ms}**

※ Condition: 05HS type, up to -60kPa
Tube : $\phi 4/\phi 2.5 \times 50\text{mm}$

Less wiring

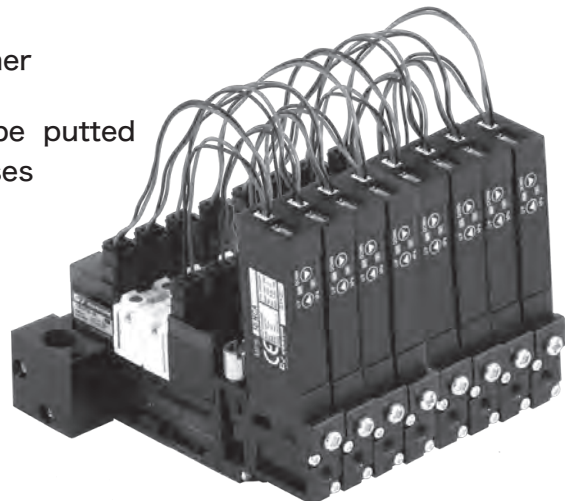
- Wiring of I/O to PLC only need one five-cable.
Wiring of vacuum generation/blow-off valve is unnecessary.
It can save the space for the device, reduce the sequencer loading,
and the operation time of electrical wiring.



Detail of the sensor → P.567

Up to 8 units can be mounted on the manifold

- Manifold can get the supply air together
- SC2 with different specifications can be putted together according to various purposes



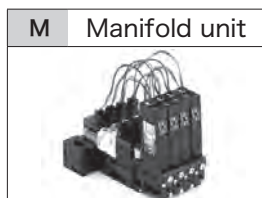
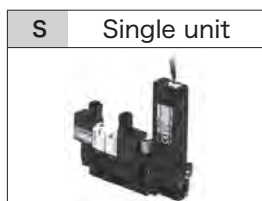
How to Order

SC2 M 05HS V9 S 3

① ② ③ ④ ⑤

In case of manifold

① Body Type



② Nozzle Type

Symbol	Nozzle size [mm]	Rated pressure [MPa]	Maximum vacuum pressure [kPa]	Suction flow [L/min (ANR)]	Air consumption [L/min (ANR)]
04HS	0.4	0.5	-85	2.5	8.5
05HS	0.5		-86.6	5.0	12
05HR		0.4		4.0	

③ Pressure Sensor

Symbol	Sensor type	Pressure range [kPa]	Display	Switch output	Analog output	Input specifications
V8	MPS-V81	-100 ~ 0	N/A	N/A	DC1~5V	N/A
V9	MPS-V9	-101.3 ~ 0	Digital	NPN 1 output	DC1~5V	N/A
10	MPS-10	-101 ~ 500	Digital	NPN 1 output	DC1~5V	Sink
ZZ	Without sensor					

※Please consult with us for PNP output type.

④ Vacuum Generation Valve Type

S	Normally closed
W	Self-holding

※Please select "S", when "05HR" selected in ②.

⑤ Manifold

Symbol	No. of stations	Symbol	No. of stations
1	1 station	5	5 stations
2	2 stations	6	6 stations
3	3 stations	7	7 stations
4	4 stations	8	8 stations



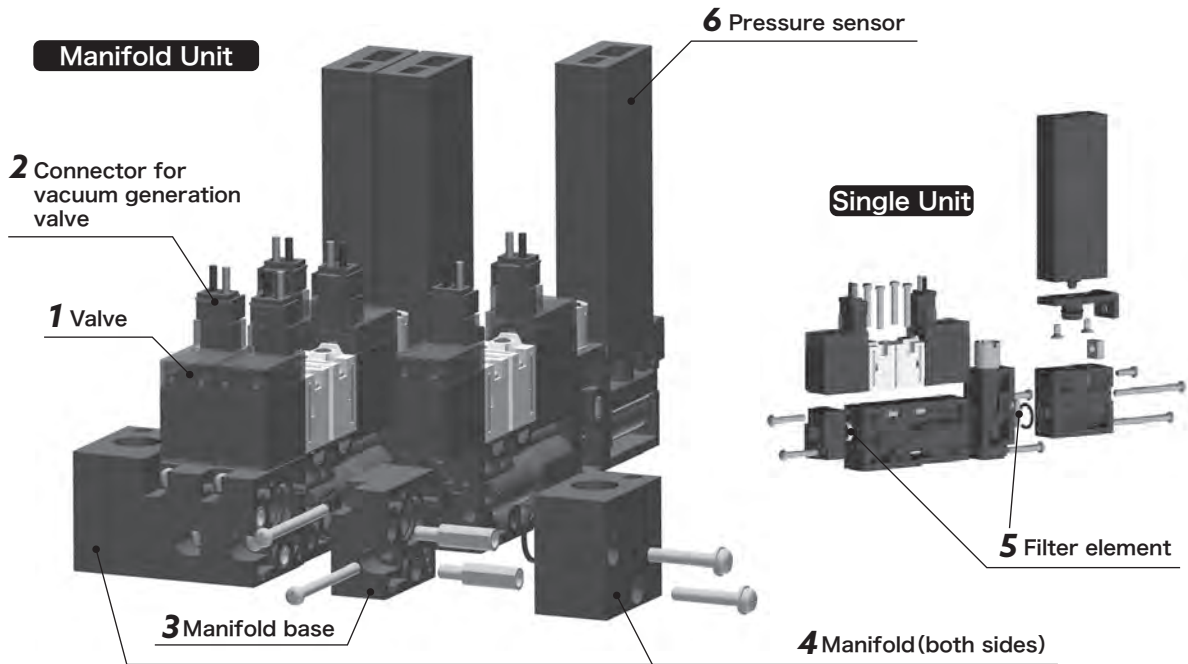
Recommend

These model number below satisfy general needs and functions with product advantages.

※Please feel free to contact us.

Product code	Model number	Specifications		
		Nozzle size (mm)	Pressure sensor	Vacuum generation valve type
204000004	SC2S04HSV9S	0.4	Digital	Normally closed
204000012	SC2S05HSV9S	0.5	Digital	Normally closed
204000008	SC2S04HSV9W	0.4	Digital	Self-holding
204000016	SC2S05HSV9W	0.5	Digital	Self-holding
204000005	SC2S04HS10S	0.4	Reduction of wiring, digital	Normally closed
204000013	SC2S05HS10S	0.5	Reduction of wiring, digital	Normally closed

Maintenance Parts



1 Valve

CKV010-4E
Common for vacuum generation and blow-off

- ※ Lead wire length 300mm
- ※ Gasket and mounting screw are included



LV290-4E
Self-holding type

- ※ Lead wire length 300mm
- ※ Gasket and mounting screw are included



2 Connector for Vacuum Generation Valve

※With lead wire

CA 2 - V4 - 6

Applicable valve

2	CKV010-4E
3	LV290-4E

Lead wire length (mm)

Blank	300
6	600
10	1000
20	2000 ^{Note1}
30	3000 ^{Note2}

Note1, 2) CKV010-4E only.



3 Manifold Base

SC2 - MB

※For increasing the number of manifold units or change from single unit to manifold unit

4 Manifold (Supply Port Parts of Both Sides)

SC2 - MB - R

5 Filter Element

SC1 - E
(5 per set)



6 Pressure Sensor

※O-ring and mounting screw are include

Model number	Specifications
MPS-V81-SC1	No display, analog output
MPS-V9-SC1	Digital display
MPS-10-SC-B	Wire-saving, digital display (normally closed, sink input)
MPS-10-SC-W	Wire-saving, digital display (self-holding, sink input)

7 Connector Cable for MPS-10 Sensor and Valve

MPS - 10 - VC - SC2 - W

Blank	Normally closed
W	Self-holding

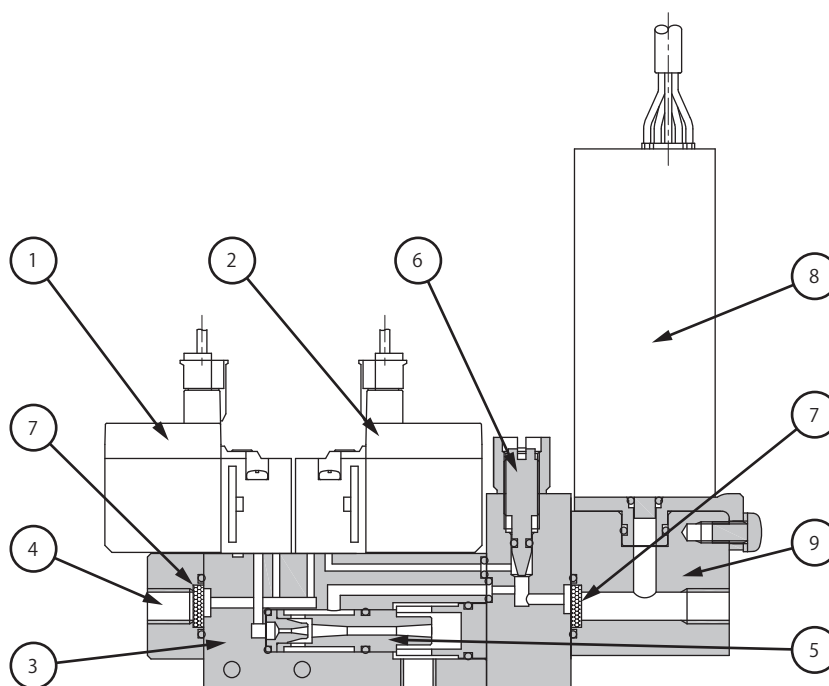
8 Vacuum Port/Supply Port Plate

※Single unit only

SC1 - M5

※For changing from with sensor type to without sensor type

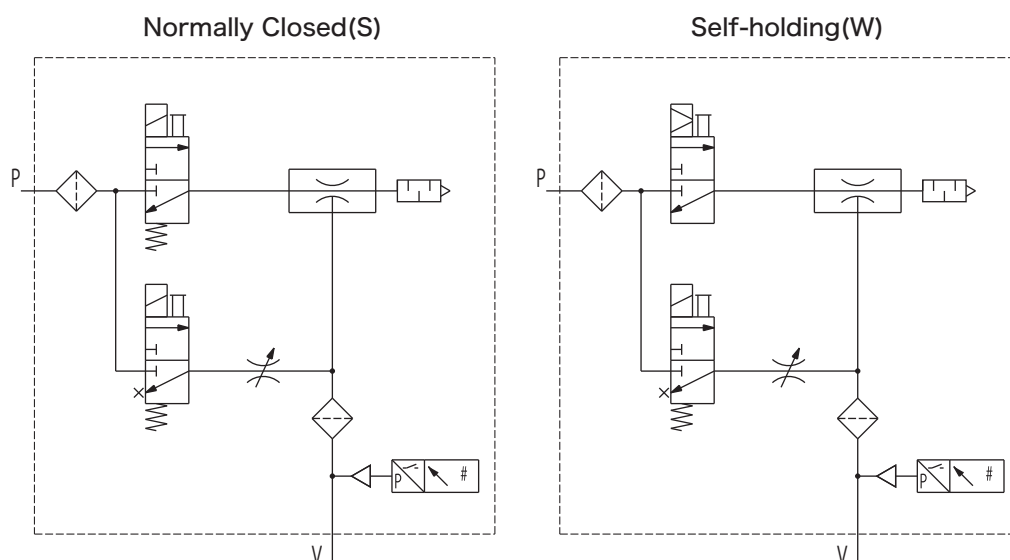
Construction



Component Parts

No.	Parts name	Material
1	Vacuum generation valve	-
2	Blow-off valve	-
3	Body	PA
4	Supply port	Aluminum
5	Nozzle kit	Aluminum, NBR
6	Blow-off flow adjustment needle	SUS, NBR
7	Filter element	PVF
8	Pressure sensor	-
9	Sensor base	PA

Symbol



CONVUM Specifications

Description \ Model number	Unit	04HS	05HS	05HR
Nozzle size	mm	0.4	0.5	
Fluid		Non-lubricated compressed air		
Ambient temperature	°C	0~55 (No Freezing)		
Operating pressure range	MPa	0.2~0.6		
Vacuum generation valve type		Normally closed (S)/self-holding (W)		
Filter element filtration	μm	350		
Filter filtration area	mm ²	13.8		
Rated pressure	MPa	0.5		0.4
Maximum vacuum pressure	kPa	-85	-86.6	
Suction flow	L/min (ANR)	2.5	5.0	4.0
Blow-off flow (supply pressure + MPa)	L/min (ANR)	9 (0.5)		8 (0.4)
Air consumption	L/min (ANR)	8.5	12	

Valve Specifications

Description \ Model number	Unit	CKV010-4E	LV290-4E
Valve structures		3 port, direct operated poppet valve	
Rated voltage	V	DC24	
Allowable voltage fluctuation	%	±10	
Power consumption (current value)			
Vacuum generation	W(mA)	1 (42)	1.3 (54)
Vacuum suspension			1.5 (63)
Minimum energization time	ms	-	30
Insulation type		Class B	
Manual override operation		Non-lock	N/A
Display/surge killer		LED/diode	
Lead wire		Lead wire with connector (300mm)	
Weight (with lead wire)	g	15.3	19.5

Pressure Sensor Specifications

Description \ Model number		Unit	MPS-V81-SC1	MPS-V9-SC1	MPS-10-SC-B/W
Fluid			Air (vacuum), non-corrosive gas, non-flammable gas		
Diaphragm			Silicon diaphragm		
Rated pressure range		kPa	-100~0	-101.3 ~ 0	-101~500
Setting pressure range		kPa	-100~0	-101.3 ~ 10	-101~500
Withstand pressure		MPa	0.5	0.3	0.8
Ambient temperature range		℃	0~60(No freezing)	0~50(No freezing)	
Ambient humidity range		%RH	35~85(No condensation)		
Power supply voltage		V	DC12~24±10%, ripple(Vp-p)5% or less		DC24±10%, ripple(Vp-p)5% or less
Current consumption		mA	20	40	50(not include the driven current for valve)
Switch output	Type		-	NPN open collector 1 output	
	Maximum load current	mA		125	
Analog output			DC1~5(±0.08) linearity 0.5%F.S. output impedance several Ω	DC1~5V(±0.1) linearity1% F.S. output impedance1kΩ	
Digital input(suction/blow off command)			-	-	Non-contact 1 input: 0V or 24V (more than 1msec)
Repeatability		%	-	±0.2F.S. 1digit or less	±0.3F.S. 1digit or less
Temperature characteristic		%	Less than±1F.S. (At standard temperature 25℃, range0~60℃)	Less than±2F.S. (At standard temperature 25℃, range0~50℃)	
Response time		ms	2 or less	1.5 or less	
Hysteresis			-	Variable	
Display	Digital		-	4-digital, 7-segment, red color LED	
	Operation		-	OUT:red color LED (ON lighting)	Output ON/OFF:red color LED Vacuum generation valve ON/OFF:green color LED
Display/set resolution		kPa	-	0.1	1
Protection	Reverse-current protection			With	
	Overvoltage protection			With	
	Output short circuit protection		-	With	
	IP class			IP40	
Vibration resistance			10~55Hz, total amplitude 1.5mm, 50m/s ² 2 hours each direction of XYZ		
Shock resistance		m/s ²	980, 3times each direction of XYZ	980, 3times each direction of XYZ	100, 3 times each direction of XYZ
Electrical connection			Grommet	Connector	
Cable			φ2.6 3 lead wires 0.82mm ² 2m	5 lead wires, 24AWG, UL AWM 20276, 1000mm ^{Note1}	
Connector			-	Maker:JST model :GHR-05V-S	

Note1) The white wire in cable of MPS-9 is not connected.

Weight (g)

Specifications			Weight
Single Unit	Vacuum generation valve type	Sensor	
Single	Normally closed	N/A	53
		With MPS-V81	82
		With MPS-V9	90
	Self-holding	N/A	56
		With MPS-V81	85
		With MPS-V9	93
Single for manifold	Normally closed	N/A	56
		With MPS-V81	85
		With MPS-V9	93
	Self-holding	N/A	59
		With MPS-V81	88
		With MPS-V9	96
		With MPS-10	98

•Manifold Base

No. of stations	1~8 stations
Weight	32

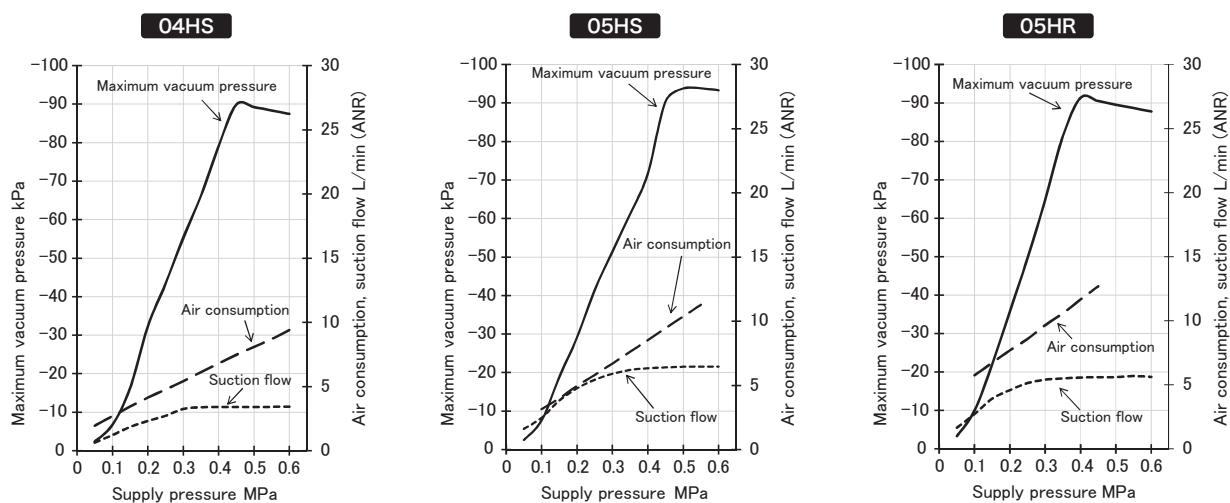
Calculation of Weight for Manifold Type

Single for manifold unit weight × No. of stations + manifold base

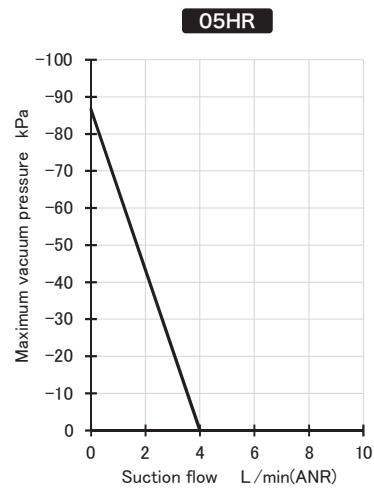
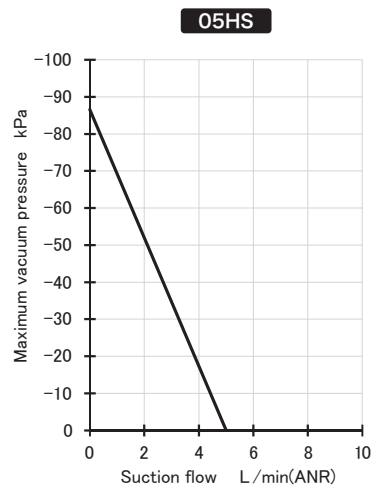
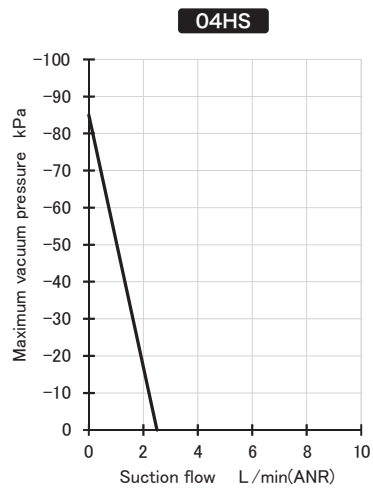
Example 1) 5 stations manifold with MPS-9 sensor, self-holding valve
 $96 \times 5 + 32 = 512\text{g}$

Example 2) 4 stations manifold without sensor and normally closed valve
 $56 \times 4 + 32 = 256\text{g}$

Performance Charts



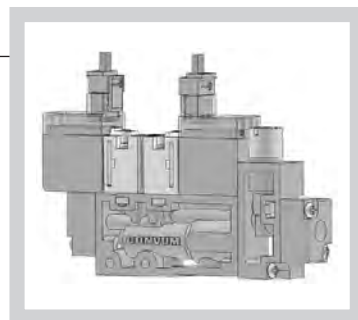
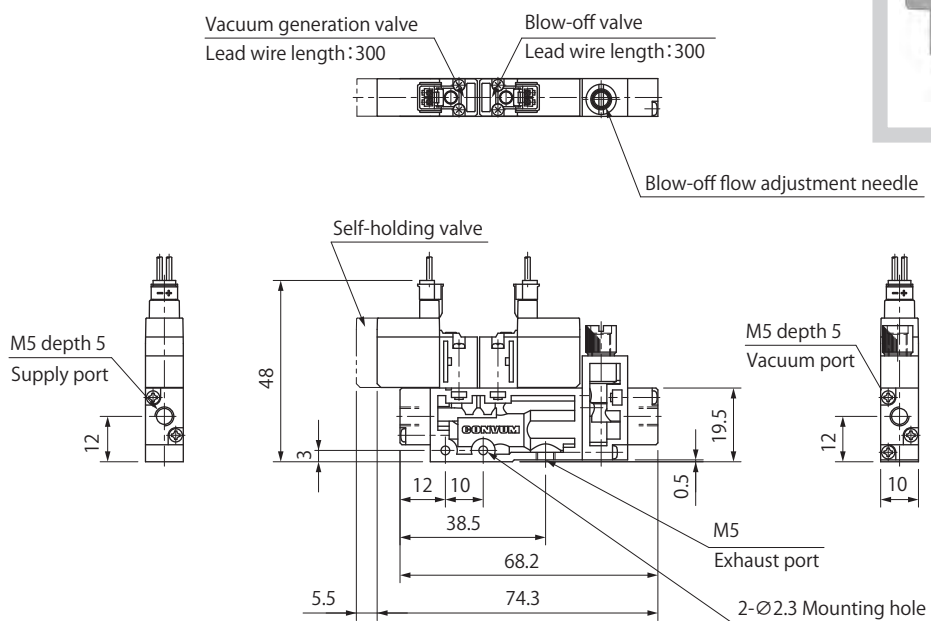
Suction Flow / Vacuum Pressure Characteristics



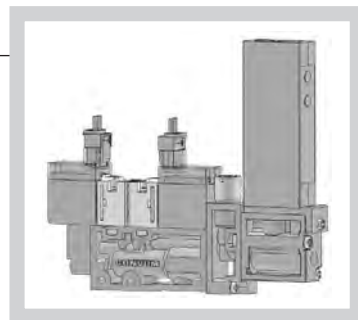
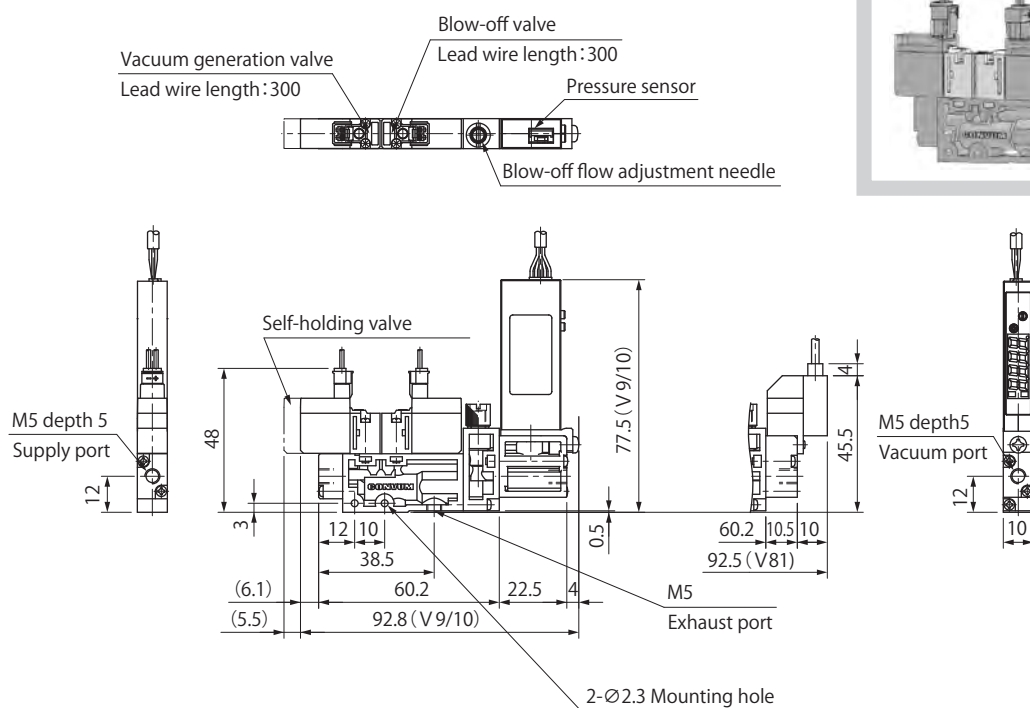
Dimensions

(mm)

Single Unit (without sensor)



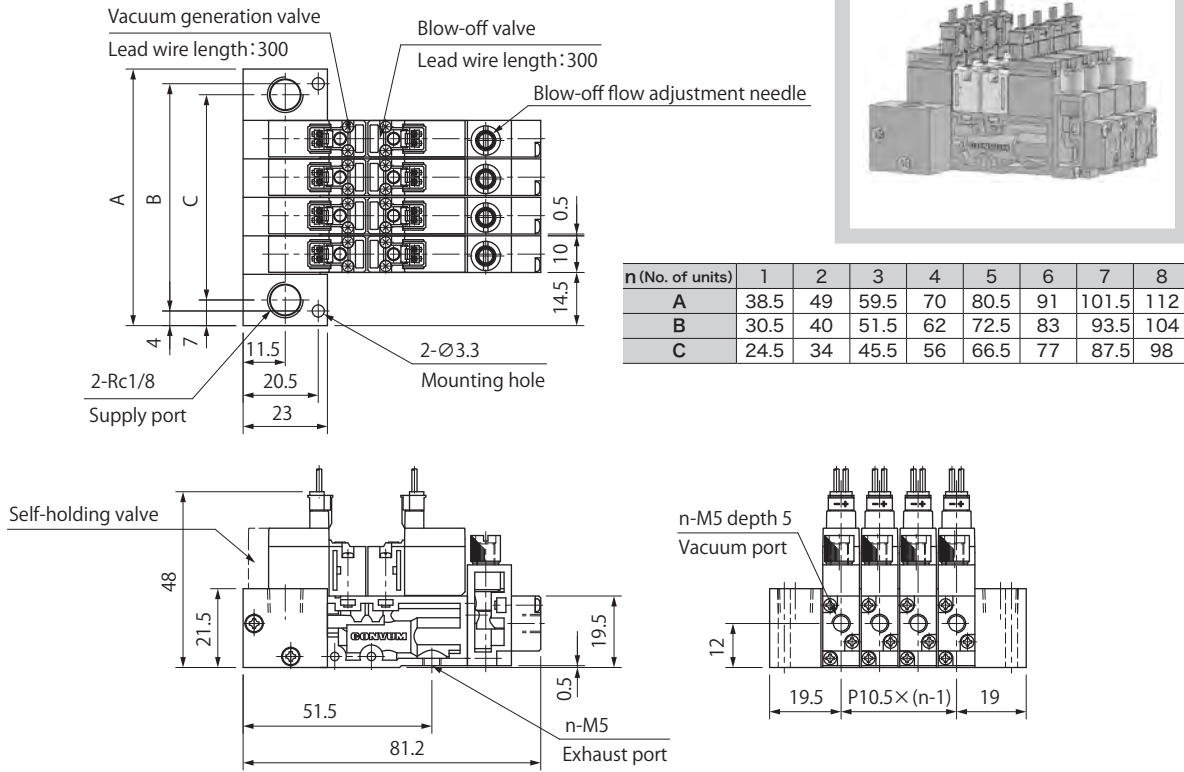
Single Unit (with sensor)



Dimensions

(mm)

Manifold Unit (without sensor)



Manifold Unit (with sensor)

