

Compact Vacuum Unit Ejector/Vacuum Pump System

New



RoHS

Quick
response

Response time
of the valve: **5 ms**
Vacuum response time: **28 ms**

Energy-
saving

Air consumption: **17% reduced***
Vacuum pressure
reached: **21% increased***

* Compared with existing model

(Shortened by **25%;**
Comparison with other SMC products)

* Conditions: Nozzle size $\phi 0.6$ mm, when the pressure reaches -8.7 psi
(-60 kPa), vacuum piping size $\phi 0.16/\phi 0.098 \times 2$ inch
($\phi 4/\phi 2.5 \times 50$ mm)

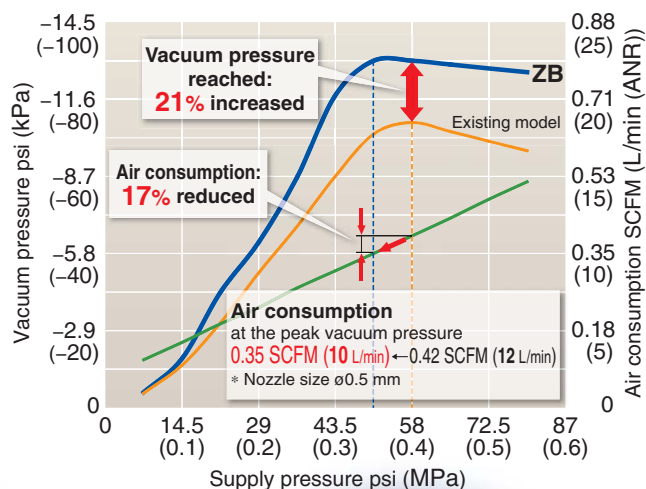
Vacuum breaking time: **14 ms**

* Conditions: Needle flow rate set to 0.35 SCFM (10 L/min), when the
pressure reaches atmospheric pressure, with supply pressure
 72.5 psi (0.5 MPa), vacuum piping size $\phi 0.16/\phi 0.098 \times 2$ inch
($\phi 4/\phi 2.5 \times 50$ mm)

Compact/
Lightweight

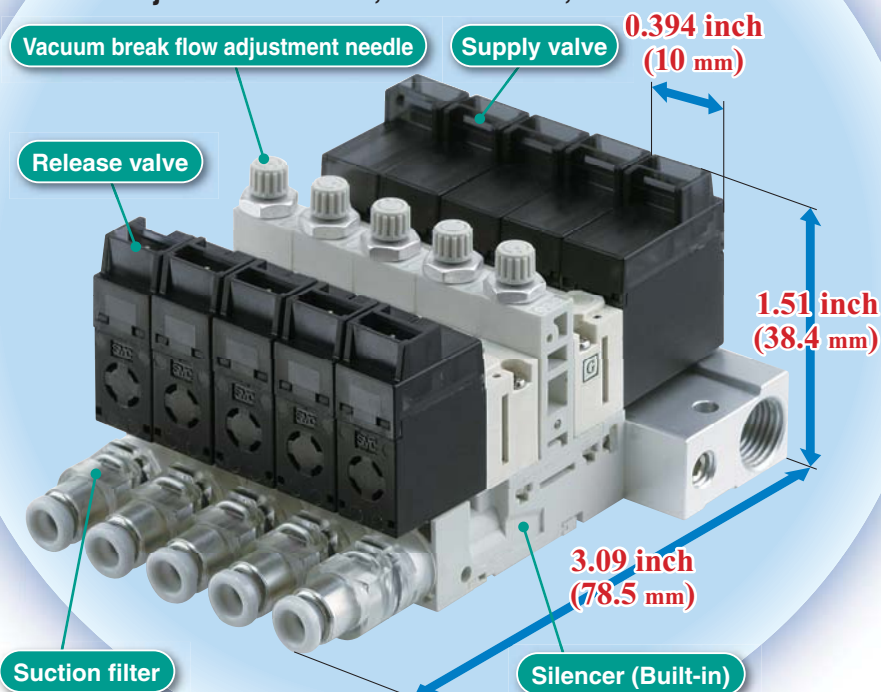
0.101 lbs (46 g)

* Single unit weight



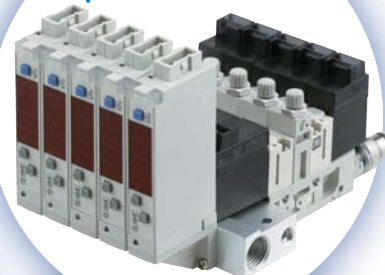
All-in-One

Supply valve, release valve, vacuum break flow
adjustment needle, suction filter, and silencer



Nominal filtration rating: $30 \mu\text{m}$

With vacuum
pressure switch

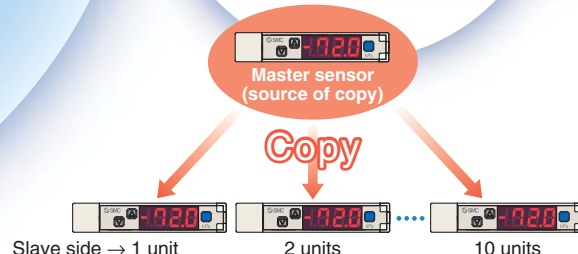


Can copy to up to
10 switches
simultaneously.

The settings of the master
sensor (source of copy) can be
copied to the slave sensors.

Reduction in setting work

Prevention of mistakes in setting



Series **ZB**



CAT.NAS100-91A

Compact Vacuum Unit Series ZB



How to Order Single Unit

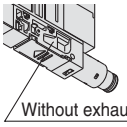
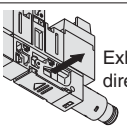
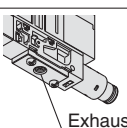
| | | | | | | | | | | | | | | | |
|--------------------|----|----|---|---|---|----|---|---|---|---|----|---|---|----|----|
| Vacuum Pump System | ZB | 00 | 2 | 0 | - | K1 | 5 | L | | - | P1 | | - | C4 | |
| Ejector | ZB | 04 | 1 | 1 | - | K1 | 5 | L | | - | P1 | | - | C4 | |
| | | 1 | 2 | 3 | | 4 | 5 | 6 | 7 | | 8 | 9 | | 10 | 11 |

1 Nominal Nozzle Size

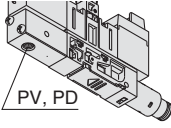
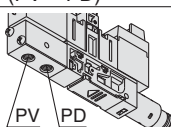
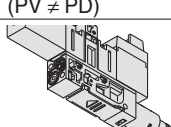
| Symbol | Nominal nozzle size | Applicable supply valve and standard supply pressure | |
|---------------------------|---------------------|--|-----------------------|
| | | Large flow (N.C.) | Latching |
| 00 <small>Note 1)</small> | — | ● | — |
| 03 | ø0.3 mm | ● 50.8 psi (0.35 MPa) | ● 58 psi (0.4 MPa) |
| 04 | ø0.4 mm | ● 50.8 psi (0.35 MPa) | ● 65.3 psi (0.45 MPa) |
| 05 | ø0.5 mm | ● 50.8 psi (0.35 MPa) | — |
| 06 | ø0.6 mm | ● 72.5 psi (0.5 MPa) | — |

Note 1) Vacuum pump system only

3 Exhaust Type

| | | |
|---|---|---|
| 0 | For vacuum pump system (Without silencer) |  Without exhaust port |
| 1 | Silencer exhaust (Individual exhaust) |  Exhaust direction |
| 2 | Port exhaust (Individual exhaust) |  Exhaust port |

2 Body Type

| Symbol | Body specification | Port specification <small>Note 2)</small> |
|--------|--------------------|--|
| 1 | Single unit |  PV, PD PV, PD common port (PV = PD) |
| 2 | Single unit |  PV PD PV, PD individual port (PV ≠ PD) |
| 3 | For manifold |  No distinction |

Note 2) Names of the ports and functions are as follows.

PV: Air pressure SUP port (Ejector)
Vacuum pressure SUP port (Vacuum pump system)

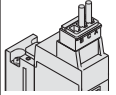
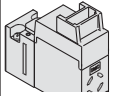
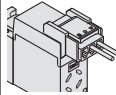
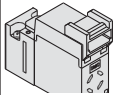
PD: Release pressure SUP port
(For the unit with PD port, select the model with a release valve for 4.)

Specify the port specification of the body for manifold with the manifold model number.

5 Rated Voltage

| | |
|---|--------|
| 5 | 24 VDC |
| 6 | 12 VDC |

6 Supply Valve/Release Valve Electrical Entry Note 4)

| | | |
|----|--|---|
| L | L-type plug connector With lead wire |  |
| LO | L-type plug connector Without connector |  |
| M | M-type plug connector With lead wire <small>Note 5)</small> |  |
| MO | M-type plug connector Without connector <small>Note 5)</small> |  |

Note 4) All with light and surge suppressor.

Lead wire length is 11.8 inch (300 mm) for the models with lead wire. For other lead wire length, select a model without connector and include the connector assembly part number in **Table 2** on page 9.

Note 5) M- and MO-type connectors cannot be selected for models with pressure sensor or pressure switch for vacuum.

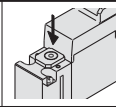
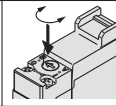
4 Combination of Supply Valve and Release Valve Note 3)

| Symbol | Supply valve | Release valve | Applicable body type | | | |
|--------|----------------------------|-----------------|----------------------|---------|-------------|---------|
| | | | Ejector | | Pump system | |
| | | | PV = PD | PV ≠ PD | PV = PD | PV ≠ PD |
| K1 | Normally closed | Normally closed | ● | ● | — | ● |
| J1 | Normally closed | None | ●* | — | ●* | — |
| Q1 | Latching (Positive common) | Normally closed | ● | ● | — | — |
| Q2 | Latching (Positive common) | None | ●* | — | — | — |

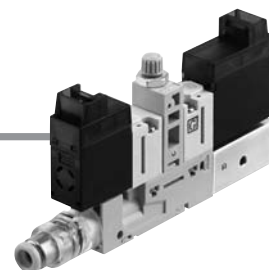
* Vacuum break by port open to atmosphere

Note 3) Refer to **Table 1** on page 9 for the part number of supply valve and release valve of each specification. Latching type is applicable only to the ejector nozzle sizes ø0.3 and ø0.4

7 Manual Override Note 6)

| | | |
|-----|--|---|
| Nil | Non-locking push type |  |
| B | Locking type (Tool required) Semi-standard |  |

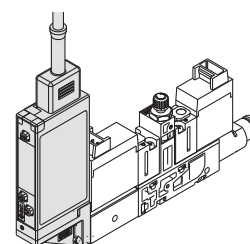
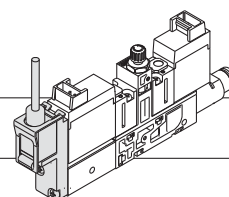
Note 6) Latching type (supply valve) has the push-locking type only, but either the push type or the locking type can be selected for the release valve.



8 Pressure Sensor/Vacuum Pressure Switch Specifications

| Symbol | Type | Pressure range psi (kPa) | Specifications |
|------------|--|-----------------------------|---|
| Nil | Without pressure sensor/vacuum pressure switch | | |
| P1 | Pressure sensor | 0 to -14.6 (0 to -101) | Output: 1 to 5 V, accuracy: $\pm 2\%$ F.S. or less ^{Note 7)} |
| P3 | | -14.5 to 14.5 (-100 to 100) | Output: 1 to 5 V, accuracy: $\pm 2\%$ F.S. or less ^{Note 7)} |
| EA | Vacuum pressure switch | 0 to -14.5 (0 to -101) | NPN 2 outputs |
| EAM | | | With unit switching function ^{Note 8)} |
| EAP | | | SI unit only ^{Note 9)} |
| EB | | | With unit switching function [Initial value psi] ^{Note 8)} |
| EBM | | -14.5 to 14.5 (-100 to 100) | PNP 2 outputs |
| EBP | | | With unit switching function ^{Note 8)} |
| FAM | | | SI unit only ^{Note 9)} |
| FAP | | | With unit switching function [Initial value psi] ^{Note 8)} |
| FB | | | PNP 2 outputs |
| FBM | | | With unit switching function ^{Note 8)} |
| FBP | | | SI unit only ^{Note 9)} |

P□: Pressure sensor



E□/F□: Vacuum pressure switch

Note 7) Only the lead wire length 118 inch (3 m) is available for the pressure sensor.

Note 8) The unit switching function is not available in Japan due to a new measurement law.

Note 9) Fixed unit: kPa

9 Lead Wire with Connector for Vacuum Pressure Switch

| | |
|------------|--|
| Nil | Without lead wire with connector (No need to specify for pressure sensor type.) |
| G | Lead wire with connector and connector cover, Lead wire length 78.7 inch (2 m) |

10 Vacuum (V) Port ^{Note 11)}

| | | | |
|------------|--|-------------|--|
| C2 | Straight $\phi 2$ mm one-touch fitting | Metric size | ^{Note 10)} With suction filter |
| C4 | Straight $\phi 4$ mm one-touch fitting | Metric size | |
| N1 | Straight $\phi 1/8$ " one-touch fitting | Inch size | |
| N3 | Straight $\phi 5/32$ " one-touch fitting | Inch size | ^{Note 10)} With suction filter |
| L2 | Elbow $\phi 2$ mm one-touch fitting | Metric size | |
| L4 | Elbow $\phi 4$ mm one-touch fitting | Metric size | |
| LN1 | Elbow $\phi 1/8$ " one-touch fitting | Inch size | |
| LN3 | Elbow $\phi 5/32$ " one-touch fitting | Inch size | |

Note 10) The filter included in this product is of a simple type, and will become clogged quickly in environments with high quantities of dust or particulates. Please make additional use of an air suction filter of the ZFA, ZFB or ZFC series.

Note 11) Be sure to hold the filter case when connecting and disconnecting the tube for the elbow type.

⚠ Warning

The filter case of this suction filter is made of nylon. Contact with alcohol or similar chemicals may cause it to be damaged. Also, do not use the filter when these chemicals are present in the atmosphere.

11 Option ^{Note 12)}

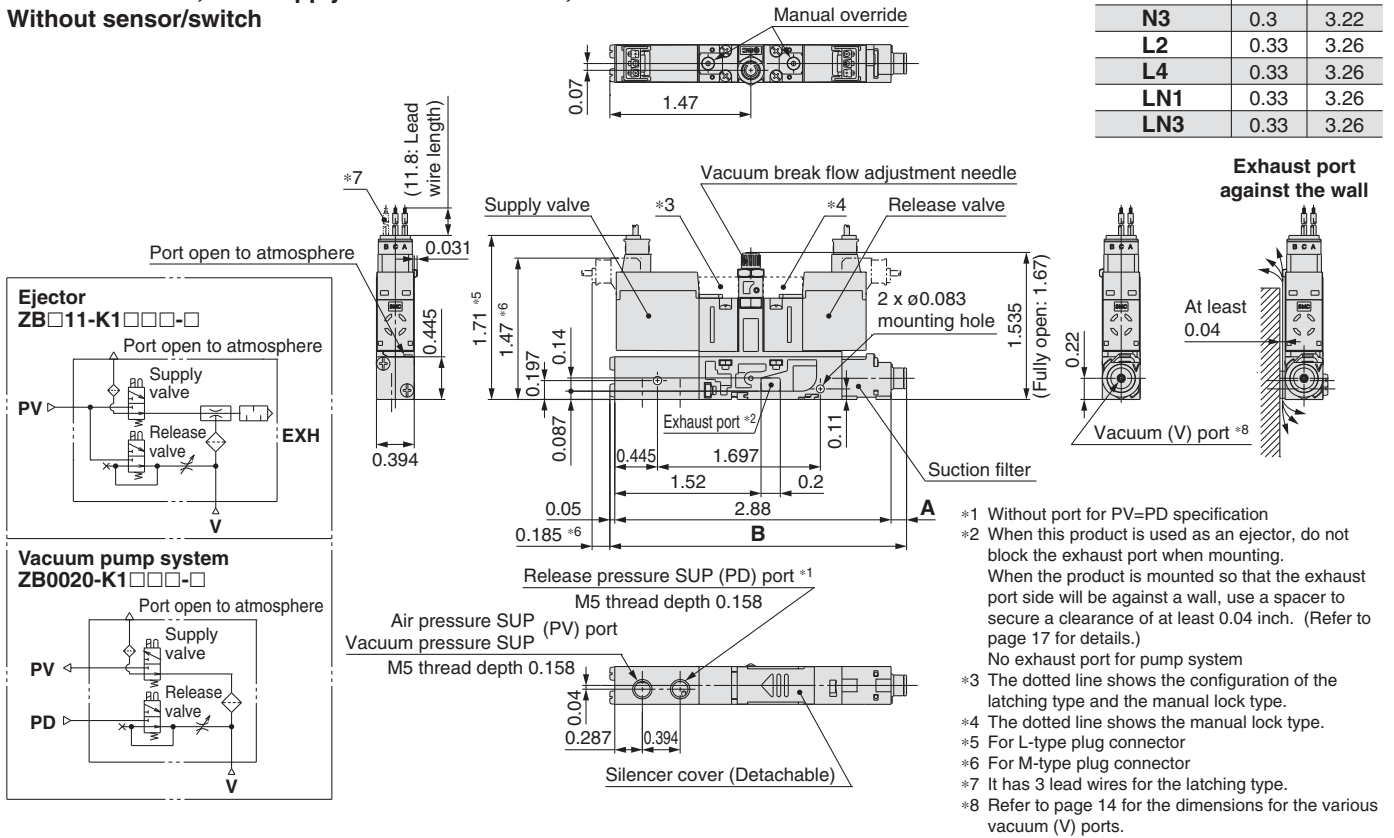
| | | |
|------------|---|-------------|
| Nil | Without option | |
| B | With bracket for single unit (Enclosed with the product for shipment without being assembled) | Bracket |
| K | Screwdriver handling type vacuum break needle | |

Note 12) When multiple options are selected, state them in alphabetical order.

Dimensions: Single Unit

ZB□¹⁰₁₁-K1□^{L(O)}_{M(O)}□-□
21

Ejector/Vacuum pump system
Silencer exhaust, With supply valve/release valve,
Without sensor/switch



ZB□¹⁰₁₁-J1□^{L(O)}_{M(O)}□-□

Ejector/Vacuum pump system
Silencer exhaust, With supply valve only,
Without sensor/switch

