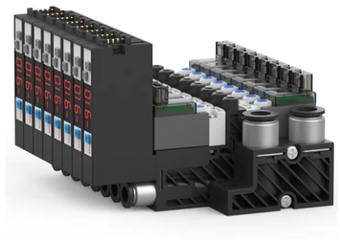
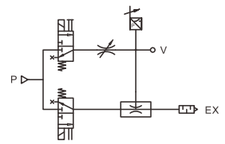
# VN Series Mini Integrated Vacuum Generator



Product Feature

- Miniature valve direct drive high speed response
- Automatic air-breaking exhaust control
- Integrated vacuum valve with fully in-house design
- Ultra-low energy consumption
  (gas consumption 6L solenoid valve power 1W)
- Supports digital and analog output
- Nozzle diameters: 0.4/0.5/0.6mm
- Compact and lightweight design (10mm thickness)




Internal Circuits

## Ordering Code

VN Series Mini Integrated Vacuum Generator

VN E 06 - 4 6 S □ SP 08

**Vacuum characteristics**

E: High-vacuum at Low air supply pressure type

**Vacuum port size (V)**

| Code | Tube O.D |
|---|---|
| 4 | 4mm |
| 6 | 6mm |

**Air supply port for suction (P)**

| Code | Tube O.D | Type |
|---|---|---|
| 4 | 4mm | Single type |
| 6 | 6mm | Single type, Manifold type |
| 8 | 8mm | Manifold type |

**Nozzle bore**

| Code | Nozzle bore (mm) | Vacuum level (kPa) | Suction flow (L/min) | Air consumption (L/min) | Supply pressure (MPa) |
|---|---|---|---|---|---|
| 04 | 0.4 | -90.4 | 2 | 6 | 0.5 |
| 05 | 0.5 | -90.4 | 3 | 8 | 0.5 |
| 06 | 0.6 | -90.4 | 5 | 12 | 0.5 |

**Exhaust port**

| Code | Specifications |
|---|---|
| S | Silencer vent |
| 4 | Tube exhaust 4mm |
| 6 | Tube exhaust 6mm |

**Release valve specification**

Nil: Standard
Z: Automatic electrically release valve

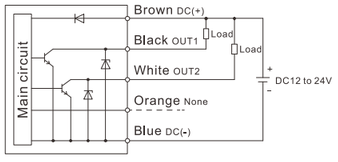
**Pressure sensor**

| Code | Specifications | |
|---|---|---|
| N | Without pressure sensor | — |
| SP | NPN output (2outputs) | With TTL communication interface |
| SA | PNP output (2outputs) | |
| SB | NPN (1 outputs) + Analog output 1 to 5V | |
| SD | PNP (1 outputs) + Analog output 1 to 5V | |

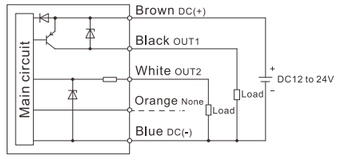
**Manifold positions**

| Code | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Stations | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

## Output Connection Diagram




Output NPN Type




Output PNP Type

Brown: Power supply+
Black: OUT1
White: OUT2 (Analogue)
Orange: Nil
Blue: DV



VN Series Mini Integrated Vacuum Generator

## Specifications

### Vacuum Generator Specification

| Working medium | | Air, Vacuum |
|---|---|---|
| Working pressure | | 0.3 to 0.7MPa |
| Vacuum pressure | | -100 to 0kPa |
| Working temperature | | 5 to 50℃ |
| Working humidity range | | 35 to 85%RH |
| Vibration resistance | | 50m/s² or less |
| Impact resistance | | 150m/s² or less |
| Enclosure | | IP40 |
| Lubrication | | No |
| Proof pressure | Supply pressure | 0.8MPa |
| | Vacuum pressure | 0.2MPa |

* Proof pressure simply means "the pressure at which the product will not be damaged", and it is the pressure at which the product can be used normally.

### Supply Valve Specification

| Action type | | Direct acting |
|---|---|---|
| Control style | | Normal closed |
| Response time | OFF→ON | 4.5ms |
| | ON→OFF | 4.5ms |

* Response time is the value when supplying 0.5 MPa rated voltage (100%).

### Release Valve Specification

| Action type | | Direct acting |
|---|---|---|
| Control style | | Normal closed |
| Response time | OFF→ON | 4.5ms |
| | ON→OFF | 4.5ms |

* Response time is the value when supplying 0.5 MPa rated voltage (100%).

### Vacuum Pressure Valve Specification

| Action type | | Compound pressure |
|---|---|---|
| Switch output | | NPN, PNP |
| Rated pressure range | | -100 to 100kPa |
| Display/Set pressure range | | -101.2 to 110kPa |
| Proof pressure | | Not more than 2 times the rated pressure |
| Power supply voltage | | DC12 to 24V±10% |
| Current consumption | | 50mA or less |
| Display accuracy | | ±3%F.S.or less (Ambient temperature 25℃) |
| Switch output | Control output | Load voltage: DC30V or less |
| | | Load current: 100mA or less |
| | Hysteresis value | Residual voltage: 1V or less |
| | Repeatability | Minimum display unit |
| | Response accuracy | ±0.2%F.S. |
| | Short circuit protection | 2.5ms, 5ms, 100ms, 500ms optional |
| Analog output | | Built-in |
| | | Output voltage: DC1~5V±2% |
| | | Resolution: 1/200 |
| | | Linearity: ±2%F.S. or less |
| | | Output impedance: 1kΩ |
| Display | | 10:37 segment LED display |

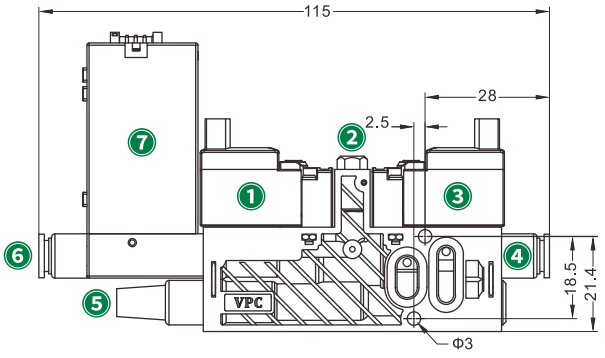
* A tolerance of ±3% F.S. is provided for changes in the "zero voltage", "span voltage" and "switching output setting value" in response to repeated application of pressure.

### Solenoid Valve Specification

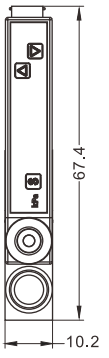
| Valve type | Supply valve, Release valve |
|---|---|
| Operating method | Direct operation |
| Valve construction | Direct acting type |
| Rated voltage | DC24V±10% |
| Limiting circuit | Surge absorber |
| Response time | 4ms |
| Power consumption | 1W |
| Manual override | Button structure |
| Operation instructions | When the coil is powered, the red indicator light comes on |
| Wiring method | Red: DC24V, Black: COM |

# VN Series Mini Integrated Vacuum Generator

## Main Dimensions

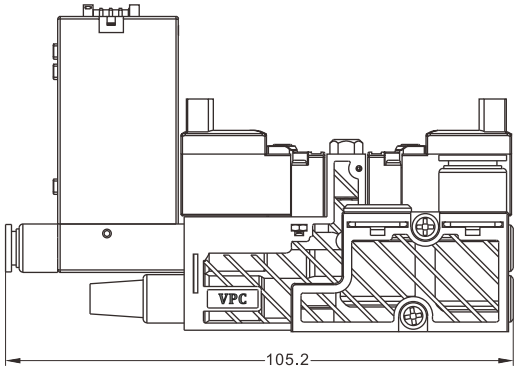



(Monolithic front view)

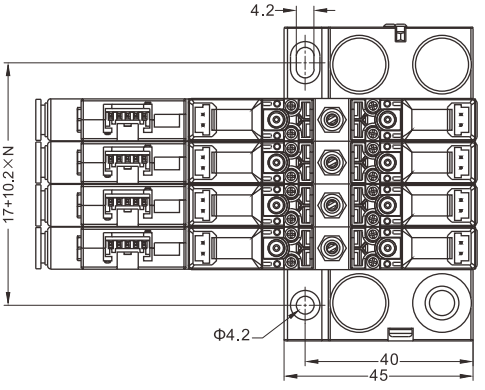



(Monolithic side view)

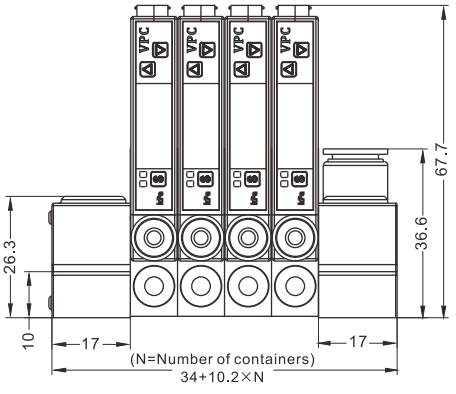
① Release valve
② Vacuum break flow adjustment valve
③ Supply valve
④ Inlet port (P)
⑤ Silencer vent (EX)
⑥ Vacuum interface(X)
⑦ Thin digital vacuum pressure switch




(Multiple front view)




(Multiple top view)




(Multiple side view)