ISO Interface Solenoid Valve

VSR/S 8

Size 1, 2 & 3

Complies with ISO Standard 5599/2
CSA approved
Lateral plug-in type manifold option
Low power Solenoids (1.8W)
ISO STANDARD VALVE INTERFACE - SIZES 1, 2 & 3

Higher range of flow rates within each valve size

<table>
<thead>
<tr>
<th>Size</th>
<th>Model</th>
<th>Seal</th>
<th>Effective area mm²</th>
<th>Response time ms.</th>
<th>Port size</th>
<th>Dimensions mm (in.)</th>
<th>Weight g (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Cv) Note 1</td>
<td>Single</td>
<td>Double</td>
<td>3 position</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>VSR8-6</td>
<td>Rubber</td>
<td>36 (2.0)</td>
<td>30</td>
<td>30</td>
<td>50</td>
<td>1/4 1/2 1/4</td>
</tr>
<tr>
<td>2</td>
<td>VSR8-8</td>
<td>Rubber</td>
<td>72 (4.0)</td>
<td>50</td>
<td>50</td>
<td>70</td>
<td>1/2 1/4 1</td>
</tr>
<tr>
<td>3</td>
<td>VSR8-10</td>
<td>Rubber</td>
<td>97 (5.4)</td>
<td>80</td>
<td>50</td>
<td>95</td>
<td>1/2 1/4 1</td>
</tr>
<tr>
<td>1</td>
<td>VSS8-6</td>
<td>Metal</td>
<td>32 (1.8)</td>
<td>25</td>
<td>20</td>
<td>45</td>
<td>1/4 1/2 1/4</td>
</tr>
<tr>
<td>2</td>
<td>VSS8-8</td>
<td>Metal</td>
<td>65 (3.6)</td>
<td>40</td>
<td>20</td>
<td>55</td>
<td>1/2 1/4 1/4</td>
</tr>
<tr>
<td>3</td>
<td>VSS8-10</td>
<td>Metal</td>
<td>90 (5.0)</td>
<td>50</td>
<td>25</td>
<td>60</td>
<td>1/2 1/4 1/4</td>
</tr>
</tbody>
</table>

Note 1) Value for valve mounted on an individual subplate. 1/2” ports for size 1, 3/4” ports for size 2, and 1” ports for size 3.
Note 2) At 0.5MPa (71psi).
Note 3) Double solenoid type.
Note 4) Single solenoid type without base.

Choice of seals for maximum flexibility
Available in either high flow rubber seal (model VSR) or matched ground spool and sleeve (model VSS).

Low power consumption: 1.8w DC
Available in 2 or 3 position, single or double solenoid pilot configuration.

Long operating life
- Rubber Seal: 30 million cycles or more
- Metal Seal: 50 million cycles or more
  * Subject to SMC’s own test data using clean and dry air

Meet the following specifications:
SAE SPEC: SAE J2051
GM SPEC: CC-003

Popular SMC models have been certified by the Canadian Standards Association and bear the CSA trademark. This designation is a registered mark which signifies that the product has been certified to the applicable CSA and UL standard for use in Canada and the United States. NRTL, i.e. Nationally Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety and Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards. Please consult the factory for specific details.
A variety of manifold & wiring options

- Individual SUP spacer (For size 1 & 2)
- Individual EXH spacer (For size 1 & 2)
- Interface speed controls (For size 1 & 2)
- Interface regulator (For size 1, 2 & 3)
- Terminal box with conduit port
- Serial transmission unit (Device Net)
- Splash proof manifold conforms to IP65 and NEMA4.

![Image of valve]

Easily increase or decrease a manifold station without rewiring the manifold.

### CYLINDER WORKING SPEED CHART

**Series VSR8/VSS8**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CV FACTOR</th>
<th>CYLINDER SPEED (MM/S)</th>
<th>CYLINDER BORE SIZE (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS8-6 (Size 1)</td>
<td>2.0</td>
<td>250, 500, 750</td>
<td>ø40, ø50, ø63, ø80, ø100, ø125, ø140, ø160, ø180, ø200</td>
</tr>
<tr>
<td>VS8-8 (Size 2)</td>
<td>4.0</td>
<td>250, 500, 750</td>
<td></td>
</tr>
<tr>
<td>VS8-10 (Size 3)</td>
<td>5.4</td>
<td>250, 500, 750</td>
<td></td>
</tr>
</tbody>
</table>

Conditions: Pressure : 0.5MPa (71psi)
Load factor : 50%
Piping length : 5m
HOW TO ORDER
ISO5599/2 VALVE MANIFOLD

ISO Size

1 Size 1
2 Size 2
3 Size 3

Number of Stations

2 2 stations
9 9 stations

Location of port 1(P), 5(EA), 3(EB)

D D side
U U side
B Both side

Symbol Port location Applicable ISO size
02 Side 1/4 Size 1
03 Side 3/8 Size 1, 2
04 Side 1/2 Size 1, 2, 3
06 Side 3/4 Size 2, 3
10 Side 1 Size 3
02B Bottom and side 1/4 with plug on side Size 1
03B Bottom and side 3/8 with plug on side Size 1, 2
04B Bottom and side 1/2 with plug on side Size 2, 3
06B Bottom and side 3/4 with plug on side Size 3
02S Side and bottom 1/4 with plug on bottom Size 1
03S Side and bottom 3/8 with plug on bottom Size 1, 2
04S Side and bottom 1/2 with plug on bottom Size 2, 3
06S Side and bottom 3/4 with plug on bottom Size 3

Conduit Port Thread (for terminal box only)

Symbol Port Thread
NIL Rc (PT)
F G (PF)
T NPTF

Symbol Port location Applicable ISO size
02 1/4 Size 1
03 3/8 Size 1, 2
04 1/2 Size 1, 2
06 3/4 Size 2, 3
10 1 Size 3

Locations and sizes of port 4(A), 2(B)

Symbol Port location Applicable ISO size
02 Side 1/4 Size 1
03 Side 3/8 Size 1, 2
04 Side 1/2 Size 1, 2, 3
06 Side 3/4 Size 2, 3
10 Side 1 Size 3
02B Bottom and side 1/4 with plug on side Size 1
03B Bottom and side 3/8 with plug on side Size 1, 2
04B Bottom and side 1/2 with plug on side Size 2, 3
06B Bottom and side 3/4 with plug on side Size 3
02S Side and bottom 1/4 with plug on bottom Size 1
03S Side and bottom 3/8 with plug on bottom Size 1, 2
04S Side and bottom 1/2 with plug on bottom Size 2, 3
06S Side and bottom 3/4 with plug on bottom Size 3

SERIAL INTERFACE MANIFOLD BLOCK ASS’Y

MBS8 080 - SU - 1W

ISO Size

060 Size 1
080 Size 2
100 Size 3

Location of SI

SU U side manifold block ass’y
**HOW TO ORDER**

**LATERAL PLUG-IN MANIFOLD BLOCKS**

**VALVE MANIFOLD BLOCKS**

**MBS** 8080 - 04B  T  -  1W  -  XG

<table>
<thead>
<tr>
<th>ISO SIZE</th>
<th>CODE</th>
<th>A, B, PORT SIZE / LOCATION</th>
<th>APPLICABLE ISO SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8080 ISO 1</td>
<td>02</td>
<td>1/4&quot; SIDE ONLY</td>
<td>1</td>
</tr>
<tr>
<td>8080 ISO 2</td>
<td>03</td>
<td>3/8&quot; SIDE ONLY</td>
<td>1, 2</td>
</tr>
<tr>
<td>8100 ISO 3</td>
<td>04</td>
<td>1/2&quot; SIDE ONLY</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>06</td>
<td>3/4&quot; SIDE ONLY</td>
<td>2, 3</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1&quot; SIDE</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>02B</td>
<td>1/4&quot; BOTTOM</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>03B</td>
<td>3/8&quot; BOTTOM</td>
<td>1, 2</td>
<td></td>
</tr>
<tr>
<td>04B</td>
<td>1/2&quot; BOTTOM</td>
<td>1, 2</td>
<td></td>
</tr>
<tr>
<td>06B</td>
<td>3/4&quot; BOTTOM</td>
<td>2, 3</td>
<td></td>
</tr>
<tr>
<td>02S</td>
<td>1/4&quot; SIDE</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>03S</td>
<td>3/8&quot; SIDE</td>
<td>1, 2</td>
<td></td>
</tr>
<tr>
<td>04S</td>
<td>1/2&quot; SIDE</td>
<td>2, 3</td>
<td></td>
</tr>
<tr>
<td>06S</td>
<td>3/4&quot; SIDE</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**OPTIONS**

<table>
<thead>
<tr>
<th>PORT THREAD</th>
<th>ISO 1179-1 THREAD SPEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIL Rc(PT)</td>
<td>XG</td>
</tr>
<tr>
<td>T NPTF</td>
<td></td>
</tr>
<tr>
<td>F G(PF)</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**

- NO PORTS ON BOTTOM OF MANIFOLD
- SIDE PORTS PLUGGED
- BOTTOM PORTS PLUGGED

**NOTE:** Device Net Serial Interface Module Manifold Block **MBS 8080 - SU - 1W**

**Device Net Serial Interface Module**  EX230 - SDN1

**HOW TO ORDER**

**LATERAL PLUG-IN MANIFOLD END PLATES**

**MES** 808  D  -  04  T  -  1W

<table>
<thead>
<tr>
<th>ISO SIZE</th>
<th>CODE</th>
<th>A, B, PORT SIZE / LOCATION</th>
<th>APPLICABLE ISO SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>808 ISO 1</td>
<td>02</td>
<td>1/4&quot; SIDE</td>
<td>1</td>
</tr>
<tr>
<td>808 ISO 2</td>
<td>03</td>
<td>3/8&quot; SIDE</td>
<td>1, 2</td>
</tr>
<tr>
<td>810 ISO 3</td>
<td>04</td>
<td>1/2&quot; SIDE</td>
<td>1, 2</td>
</tr>
<tr>
<td>06</td>
<td>3/4&quot; SIDE</td>
<td>1, 2</td>
<td></td>
</tr>
</tbody>
</table>

**PORT THREAD**

<table>
<thead>
<tr>
<th>PORT SIZE</th>
<th>APPLICABLE ISO SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>1/4 Size 1</td>
</tr>
<tr>
<td>03</td>
<td>3/8 Size 1, 2</td>
</tr>
<tr>
<td>04</td>
<td>1/2 Size 1, 2</td>
</tr>
<tr>
<td>06</td>
<td>3/4 Size 2, 3</td>
</tr>
<tr>
<td>10</td>
<td>1 Size 3</td>
</tr>
</tbody>
</table>

**NOTE:** When ordering parts for assembly, (2) AXT502-34-*** (use*** for number of stations) tie rods must be ordered separately for size 1 only. If only connecting size 1 end plates to manifold. (2) AXT502-4-2 must be ordered separately.
HOW TO ORDER
MANIFOLD ASSEMBLIES FOR (4-PIN EURO CONNECTOR) PLUG-IN VALVE BASES

VV8  1  5  -  03S  -  W  03  D  T  -  X6

4-PIN EURO CONNECTOR
X6
X13
X17
X53

PORT THREAD
NIL  Rc(PT)
T  NPTF
F  G(PF)

P. EXH. PORT LOCATION
D  DOWN STREAM
U  UP STREAM
B  BOTH

CODE  A, B, PORT SIZE / LOCATION  APPLICABLE ISO SIZE  NOTES
02  1/4" SIDE ONLY  1
03  3/8" SIDE ONLY  1, 2
04  1/2" SIDE ONLY  1, 2, 3
02B  1/4" BOTTOM  2, 3
03B  3/8" BOTTOM  1, 2
02S  1/4" SIDE  1
03S  3/8" SIDE  1, 2

ISO SIZE
1  ISO 1
2  ISO 2
3  ISO 3

NUMBER OF STATIONS
2  2 STATIONS
:  :
10  10 STATIONS

NOTES
NO PORTS ON BOTTOM OF MANIFOLD
SIDE PORTS PLUGGED
BOTTOM PORTS PLUGGED

HOW TO ORDER
LATERAL PLUG-IN MANIFOLD BLOCKS WITH 4-PIN EURO CONNECTOR

VALVE MANIFOLD BLOCKS
MBS  8080  -  04B  T  -  1W  -  X6

4-PIN EURO CONNECTOR
X6
X13
X17
X53

PORT THREAD
NIL  Rc(PT)
T  NPTF
F  G(PF)

CODE  A, B, PORT SIZE / LOCATION  APPLICABLE ISO SIZE  NOTES
02  1/4" SIDE ONLY  1
03  3/8" SIDE ONLY  1, 2
04  1/2" SIDE ONLY  1, 2, 3
02B  1/4" BOTTOM  1
03B  3/8" BOTTOM  1, 2
02S  1/4" SIDE  1
03S  3/8" SIDE  1, 2
04S  3/4" SIDE  2, 3

ISO SIZE
8060  ISO 1
8080  ISO 2

NOTES
NO PORTS ON BOTTOM OF MANIFOLD
SIDE PORTS PLUGGED
BOTTOM PORTS PLUGGED

For wiring options, please refer to page 13 for more information.
**Model**

<table>
<thead>
<tr>
<th>Size</th>
<th>Model</th>
<th>Seal</th>
<th>Effective area (mm²) (Cv)</th>
<th>Response time (ms)</th>
<th>Weight (oz)</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VSR8-6</td>
<td>Rubber</td>
<td>36 (2.0)</td>
<td>30 30 30</td>
<td>552</td>
<td>1/4, 3/8, 1/2</td>
</tr>
<tr>
<td></td>
<td>VSS8-6</td>
<td>Metal</td>
<td>32 (1.8)</td>
<td>25 20 45</td>
<td>3/4</td>
<td>1/2, 3/4, 1/4</td>
</tr>
<tr>
<td>2</td>
<td>VSR8-8</td>
<td>Rubber</td>
<td>72 (4.0)</td>
<td>50 50 70</td>
<td>824</td>
<td>3/4, 1/2, 3/4</td>
</tr>
<tr>
<td></td>
<td>VSS8-8</td>
<td>Metal</td>
<td>65 (3.6)</td>
<td>40 20 55</td>
<td>1000</td>
<td>2/2, 1</td>
</tr>
<tr>
<td>3</td>
<td>VSR8-10</td>
<td>Rubber</td>
<td>97 (5.4)</td>
<td>80 50 95</td>
<td>1000</td>
<td>2/2, 1</td>
</tr>
<tr>
<td></td>
<td>VSS8-10</td>
<td>Metal</td>
<td>90 (5.0)</td>
<td>50 25 60</td>
<td>1000</td>
<td>2/2, 1</td>
</tr>
</tbody>
</table>

Note 1) With port size 1/2 for VSR/VSS8-6, 3/4 for VSR/VSS8-10
Note 2) Subject to JISB8375-1981. At 0.5MPa (71psi)
Note 3) Single solenoid type without base

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>Rubber Seal</th>
<th>Metal Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve operation</td>
<td>Pilot operated, 5 port</td>
<td></td>
</tr>
<tr>
<td>Fluid</td>
<td>Air, Inert gas</td>
<td></td>
</tr>
<tr>
<td>Operating pressure range MPa (psi)</td>
<td>0.1–1.0 (14.5–145)</td>
<td>0.1–1.6 (14.5–230)</td>
</tr>
<tr>
<td>Proof pressure MPa (psig)</td>
<td>1.5 (217)</td>
<td>2.4 (348)</td>
</tr>
<tr>
<td>Ambient and fluid temperature °C (°F)</td>
<td>-5–50 (23–122)</td>
<td>-20–60 (-4–140)</td>
</tr>
<tr>
<td>Maximum operating frequency cycle/Sec.</td>
<td>2-position: 8-6.5, 8-8.5, 8-10:5</td>
<td>8-6:20, 8-8:15, 8-10:10</td>
</tr>
<tr>
<td></td>
<td>3-position: 8-6:3, 8-8:3, 8-10:2</td>
<td>8-6:10, 8-8:10, 8-10:20</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Manual override</td>
<td>non-locking push type</td>
<td></td>
</tr>
<tr>
<td>Protection structure</td>
<td>NEMA 4/IP65</td>
<td></td>
</tr>
<tr>
<td>Coil rated voltage</td>
<td>24VDC, 12VDC</td>
<td></td>
</tr>
<tr>
<td>Allowable voltage range %</td>
<td>-15–10% of rated voltage</td>
<td></td>
</tr>
<tr>
<td>Coil insulation</td>
<td>Class B or equivalent</td>
<td></td>
</tr>
<tr>
<td>Apparent power @ 50Hz Note3</td>
<td>Inrush 50Hz: 5.6</td>
<td>Inrush N/A</td>
</tr>
<tr>
<td>For 12 VDC</td>
<td>60Hz: 5.0</td>
<td>60Hz: 3.4</td>
</tr>
<tr>
<td></td>
<td>Holding 50Hz: 2.3</td>
<td>Holding 0.075 AMPS</td>
</tr>
<tr>
<td>Apparent power @ 50Hz Note3</td>
<td>Inrush N/A</td>
<td>Inrush N/A</td>
</tr>
<tr>
<td>For 24 VDC</td>
<td>60Hz: 2.3</td>
<td>60Hz: 0.075 AMPS</td>
</tr>
<tr>
<td></td>
<td>Holding 50Hz: 1.8</td>
<td></td>
</tr>
<tr>
<td>Surge voltage suppressor and indicator light</td>
<td>Available as option</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Pilot pressure range should be 0.1–1.0MPa (14.5–145psi).
Note 2) Use dry air to prevent dew condensation at low temperature.
Note 3) Subject to JISB8375-1975.
HOW TO ORDER VALVE

VS R 8-6 FG S 3EZ V1 A03T X1

Type of seal
R Rubber
S Metal

Size
6 Size 1
8 Size 2
10 Size 3

Configuration
FG 2-position
FJG 3-position, Exhaust center
FG 3-position, Pressure center
YHG 3-position, Dual Closed center
* YJZ 3-position, Dual Exhaust center
* YIZ 3-position, Dual Pressure center

Number of Solenoid
S Single
D Double

Special Options
NIL Standard
X1 External Pilot Supply

Rated voltage
3EZ 24VDC
4EZ 12VDC

* Consult an SMC representative for other voltage options.
Note: Blue Colour Coded Coil for 24VDC

Pilot Exhaust Options
NIL Pilot Exh. through footprint
V1 External Individual Pilot Exhaust

HOW TO ORDER ISO SUB-BASES

VS8 1 A03 T XG

ISO SIZE
1 ISO 1
2 ISO 2
3 ISO 3

4-PIN EURO CONNECTOR
XG
X11
X53

OPTIONS
NIL
XG ISO 1179-1 THREAD SPEC

PORT THREAD
NIL RC(PT)
T NPT
F G(PF)

P. EXH. PORT LOCATION
A02 1/4" SIDE
B02 1/4" BOTTOM
A03 3/8" SIDE
B03 3/8" BOTTOM
A04 1/2" SIDE
B04 1/2" BOTTOM
A06 3/4" SIDE
A10 1" SIDE

ISO SUB BASES WITH 4-PIN CONNECTORS

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PART#</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS8-1-A03T with 4 pin micro-connector</td>
<td>US15893</td>
</tr>
<tr>
<td>VS8-2-A04T with 4 pin micro-connector</td>
<td>US2249</td>
</tr>
<tr>
<td>VS8-3-A06T with 4 pin micro-connector</td>
<td>US18552</td>
</tr>
</tbody>
</table>
**CONSTRUCTION**

**SERIES VSS (METAL SEAL TYPE)**

**SINGLE SOLENOID**

1. Piston assembly A
2. Piston assembly B
3. Gasket
4. Gasket
5. Return spring A
6. Return spring B
7. Detent assembly
8. Pilot valve assembly

**DOUBLE SOLENOID**

**3-POSITION**

**PART LIST**

<table>
<thead>
<tr>
<th>Description</th>
<th>Single solenoid</th>
<th>Double solenoid</th>
<th>3 position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Piston assembly A</td>
<td>VSS8-6</td>
<td>VSS8-6</td>
<td>VSS8-6</td>
</tr>
<tr>
<td>2. Piston assembly B</td>
<td>VSS8-8</td>
<td>VSS8-8</td>
<td>VSS8-8</td>
</tr>
<tr>
<td>3. Gasket</td>
<td>VSS8-10</td>
<td>VSS8-10</td>
<td>VSS8-10</td>
</tr>
<tr>
<td>5. Return spring A</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. Return spring B</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7. Detent assembly</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8. Pilot valve assembly</td>
<td>SF4-L50542 F-30</td>
<td>SF4-L50542 F-30</td>
<td>SF4-L50542</td>
</tr>
</tbody>
</table>

**Note:**
- Single solenoid
- Double solenoid
- 3 position
### CONSTRUCTION

#### SERIES VSR (RUBBER SEAL TYPE)

**SINGLE SOLENOID**

1. Piston assembly A
2. Piston assembly B
3. Gasket
4. Gasket
5. Return spring A
6. Return spring B
7. Detent assembly
8. Pilot valve assembly

**DOUBLE SOLENOID**

1. Piston assembly A
2. Piston assembly B
3. Gasket
4. Gasket
5. Return spring A
6. Return spring B
7. Detent assembly
8. Pilot valve assembly

**3-POSITION**

1. Piston assembly A
2. Piston assembly B
3. Gasket
4. Gasket
5. Return spring A
6. Return spring B
7. Detent assembly
8. Pilot valve assembly

### PART LIST

<table>
<thead>
<tr>
<th>Description</th>
<th>Single solenoid</th>
<th>Double solenoid</th>
<th>3 position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Piston assembly A</td>
<td>VSS8-6</td>
<td>VSS8-6</td>
<td>VSS8-6</td>
</tr>
<tr>
<td>2. Piston assembly B</td>
<td>VSS8-8</td>
<td>VSS8-8</td>
<td>VSS8-8</td>
</tr>
<tr>
<td>3. Gasket</td>
<td>VSS8-10</td>
<td>VSS8-10</td>
<td>VSS8-10</td>
</tr>
<tr>
<td>4. Gasket</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Return spring A</td>
<td>V8060-19-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Return spring B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Detent assembly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Pilot valve assembly</td>
<td>SF4□ F-30</td>
<td>SF4□ F-30</td>
<td>SF4□ F-30</td>
</tr>
</tbody>
</table>
VALVES

ALL DIMENSIONS ARE IN MILLIMETERS

<table>
<thead>
<tr>
<th>SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE 1</td>
<td>188.5</td>
<td>103</td>
<td>19</td>
<td>38</td>
<td>65</td>
<td>150.5</td>
</tr>
<tr>
<td>SIZE 2</td>
<td>205</td>
<td>110.5</td>
<td>25</td>
<td>50</td>
<td>67.5</td>
<td>175</td>
</tr>
<tr>
<td>SIZE 3</td>
<td>228</td>
<td>122</td>
<td>32</td>
<td>64</td>
<td>71</td>
<td>198</td>
</tr>
</tbody>
</table>
ISO SIZE 1 SUB-BASE

VS8-1-□ 02/03/04□

ALL DIMENSIONS ARE IN MILLIMETERS
ISO SIZE 2-3 SUB-BASE

VS8-03/04/06/10

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>*</td>
<td>28</td>
<td>48.5</td>
<td>36</td>
<td>32.5</td>
<td>52</td>
<td>32.5</td>
<td>47.5</td>
<td>29</td>
<td>8.5</td>
</tr>
<tr>
<td>3</td>
<td>22</td>
<td>27</td>
<td>47</td>
<td>45</td>
<td>40</td>
<td>65</td>
<td>40</td>
<td>71</td>
<td>**</td>
<td>22</td>
</tr>
</tbody>
</table>

* 3/8 - 14.5
1/2 - 16
3/4 - 18.5

<table>
<thead>
<tr>
<th></th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>19</td>
<td>17.5</td>
<td>15.5</td>
<td>27</td>
<td>187.5</td>
<td>174.5</td>
<td>58</td>
<td>19</td>
<td>41</td>
<td>57</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>26</td>
<td>19</td>
<td>40</td>
<td>234</td>
<td>221</td>
<td>76</td>
<td>27</td>
<td>39</td>
<td>65</td>
</tr>
</tbody>
</table>

2 MOUNTING HOLES
SIZE 2 - ø7
SIZE 3 - ø9

2 PORTS - A,B, PORTS
SIZE 2 - 3/8, 1/2, 3/4
SIZE 3 - 1/2, 3/4, 1

PILOT EXH PORTS
SIZE 2 - 2-1/8
SIZE 3 - 2 PORTS

M12 CONNECTOR
OPTIONAL

ALL DIMENSIONS ARE IN MILLIMETERS

2 PORTS - A,B, PORTS
SIZE 2 - 3/8, 1/2, 3/4
SIZE 3 - 1/2, 3/4, 1

P PORT

* 28 48 .5 36 32 .5 52 32 .5 47 .5 19 17 .5 15 .5 27 18 7.5 17 4.5 58 19 22 27 47 45 40 65 40 71 22 57

** 3/8 - 14.5
1/2 - 16
3/4 - 18.5
### WIRING INFORMATION

#### SUB-BASE

<table>
<thead>
<tr>
<th>OPTION</th>
<th>PIN 1</th>
<th>PIN 2</th>
<th>PIN 3</th>
<th>PIN 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>X11</td>
<td>NOT USED</td>
<td>12 (B) +</td>
<td>COMMON</td>
<td>14 (A) +</td>
</tr>
<tr>
<td>X53</td>
<td>PIN 1</td>
<td>PIN 2</td>
<td>PIN 3</td>
<td>PIN 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOT USED</td>
<td>COMMON</td>
<td>12 (B) +</td>
</tr>
</tbody>
</table>

#### MANIFOLD BLOCK

<table>
<thead>
<tr>
<th>OPTION</th>
<th>PIN 1</th>
<th>PIN 2</th>
<th>PIN 3</th>
<th>PIN 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>X6</td>
<td>PIN 1</td>
<td>PIN 2</td>
<td>PIN 3</td>
<td>PIN 4</td>
</tr>
<tr>
<td></td>
<td>NOT USED</td>
<td>14 (A) +</td>
<td>COMMON</td>
<td>12 (B) +</td>
</tr>
<tr>
<td>X13</td>
<td>PIN 1</td>
<td>PIN 2</td>
<td>PIN 3</td>
<td>PIN 4</td>
</tr>
<tr>
<td></td>
<td>NOT USED</td>
<td>14 (A) +</td>
<td>COMMON</td>
<td>12 (B) +</td>
</tr>
</tbody>
</table>

#### TERMINAL STRIP 22 POSITION

- TERM P1=OUT 0
- TERM P2=OUT 1
- TERM P3=OUT 2
- TERM P4=OUT 3
- TERM P5=OUT 4
- TERM P6=OUT 5
- TERM P7=OUT 6
- TERM P8=OUT 7
- TERM P9=OUT 8
- TERM P10=OUT 9
- TERM P11=OUT 10
- TERM P12=OUT 11
- TERM P13=OUT 12
- TERM P14=OUT 13
- TERM P15=OUT 14
- TERM P16=OUT 15
- TERM P17=OV
- TERM P18=OV
- TERM P19=PE
- TERM P20=ITV +24
- TERM P21=ITV_IN0
- TERM P22=ITV_IN1
- TERM P23=OV
### INTERFACE OPTIONS

![Image of an interface options setup](image)

### STANDARD SPECIFICATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>ISO Size 1</th>
<th>ISO Size 2</th>
<th>ISO Size 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable solenoid valve</td>
<td>VSR/S8-6</td>
<td>VSR/S8-8</td>
<td>VSR/S8-10</td>
</tr>
<tr>
<td>Individual SUP Spacer</td>
<td>VV81-P-02/03/04</td>
<td>VV82-P-03/04/06</td>
<td>VV83-P-10T-X66US</td>
</tr>
<tr>
<td>Individual EXH Spacer</td>
<td>VV81-R-02/03/04</td>
<td>VV82-R-03/04/06</td>
<td></td>
</tr>
<tr>
<td>Interface Speed Control</td>
<td>VVS8060-22A</td>
<td>VVS8080-22A</td>
<td></td>
</tr>
<tr>
<td>Valve Dual Sandwich Regulator W/Gauge</td>
<td>VVS8060-ARB-YAB-1</td>
<td>VVS8080-ARB-YAB-1</td>
<td>VVS8100-ARB-YAB-1</td>
</tr>
<tr>
<td>Valve Single Sandwich Regulator</td>
<td>NARB250-NO-1-1</td>
<td>NARB350-NO-1-1</td>
<td>NARB350-00-1-1</td>
</tr>
<tr>
<td>Blank Plate, Ass’y</td>
<td>VVS8060-11A</td>
<td>VVS8080-11A</td>
<td>VVS8100-11A</td>
</tr>
<tr>
<td>Blocking Disk</td>
<td>VVS8060-14A</td>
<td></td>
<td>VVS8100-14A</td>
</tr>
<tr>
<td>Blocking Disk [1(P) Port]</td>
<td></td>
<td>VVS8080-14A</td>
<td>VVS8100-14A</td>
</tr>
<tr>
<td>Blocking Disk [3(EB) Port]</td>
<td></td>
<td>VVS8080-15A</td>
<td>VVS8100-14A</td>
</tr>
<tr>
<td>Blocking Disk [5(EA) Port]</td>
<td></td>
<td>VVS8080-15A</td>
<td>VVS8100-14A</td>
</tr>
</tbody>
</table>

**NOTE:** For interface speed controllers ISO Size 3 consult SMC Pneumatics.
"DUAL" SANDWICH REGULATOR

NOTE:
1) FOR APPLICATIONS USING DUAL PRESSURE REGULATORS
THE CONFIGURATION OF VALVES TO USE ARE
"YZ" STYLE FOR 2 POSITION
"YHZ" AND "YJZ" STYLE FOR 3 POSITION.

2) FOR APPLICATIONS USING SIZE 3 "A" AND "B" STYLE REGULATORS
THE CONFIGURATION OF VALVES TO USE ARE
"YZ" STYLE FOR 2 POSITION
"YHZ" AND "YJZ" STYLE FOR 3 POSITION.

3) ALL DIMENSIONS ARE IN MILLIMETERS

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE 1</td>
<td>294</td>
<td>-</td>
<td>141</td>
<td>153</td>
<td>100</td>
<td>21.3</td>
<td>42.6</td>
<td>35</td>
<td>59.5</td>
<td>124.5</td>
</tr>
<tr>
<td>SIZE 2</td>
<td>338</td>
<td>-</td>
<td>163.2</td>
<td>174.7</td>
<td>97</td>
<td>27.8</td>
<td>55.6</td>
<td>35</td>
<td>57.6</td>
<td>120</td>
</tr>
<tr>
<td>SIZE 3</td>
<td>427.5</td>
<td>287</td>
<td>208.5</td>
<td>219</td>
<td>100.4</td>
<td>35.3</td>
<td>70.6</td>
<td>48.2</td>
<td>81.2</td>
<td>133</td>
</tr>
</tbody>
</table>
MANIFOLD M12 CONNECTORS

LENGTH FORMULA
L1 = 43n + 72
L2 = 43n + 94

LENGTH FORMULA
L1 = 56n + 90
L2 = 56n + 106

LENGTH FORMULA
L1 = 71n + 66
L2 = 71n + 90

n = NUMBER OF STATIONS (MIN. 2, MAX. 10)

NOTES:
1) SIZE 1 - 1/4, 3/8, 1/2
   SIZE 2 - 3/8, 1/2, 3/4
   SIZE 3 - 3/4, 1
   6 PORTS, 1, 3, 5 PORTS
2) SIZE 1 - 1/4, 3/8, 1/2
   SIZE 2 - 3/8, 1/2, 3/4
   SIZE 3 - 1/2, 3/4, 1
   2 PORTS, 4 PORTS
3) ALL DIMENSIONS ARE IN MILLIMETERS
MANIFOLD WITH TERMINAL BOX

NOTES:
1) SIZE 1 - 1/4, 3/8, 1/2
   SIZE 2 - 3/8, 1/2, 3/4
   SIZE 3 - 3/4, 1
   6 PORTS, 1, 3, 5 PORTS
2) SIZE 1 - 1/4, 3/8, 1/2
   SIZE 2 - 3/8, 1/2, 3/4
   SIZE 3 - 1/2, 3/4, 1
   2 PORTS, 2, 4 PORTS
3) ALL DIMENSIONS ARE IN MILLIMETERS

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE 1</td>
<td>177.5</td>
<td>119</td>
<td>9</td>
<td>50.5</td>
<td>48.5</td>
<td>58.5</td>
<td>87</td>
<td>105</td>
<td>20.5</td>
<td>26.5</td>
<td>20.5</td>
<td>30.5</td>
<td>58.5</td>
<td>22</td>
<td>45.5</td>
<td>52</td>
<td>81</td>
<td>49</td>
<td>18</td>
</tr>
<tr>
<td>SIZE 2</td>
<td>189.5</td>
<td>125</td>
<td>9</td>
<td>52</td>
<td>52.5</td>
<td>64.5</td>
<td>96.5</td>
<td>112</td>
<td>26</td>
<td>34</td>
<td>26</td>
<td>37</td>
<td>64.5</td>
<td>31.5</td>
<td>58.5</td>
<td>67.5</td>
<td>97.5</td>
<td>58.5</td>
<td>20.5</td>
</tr>
<tr>
<td>SIZE 3</td>
<td>234.50</td>
<td>142.5</td>
<td>13</td>
<td>77.5</td>
<td>79.5</td>
<td>92</td>
<td>108</td>
<td>123.5</td>
<td>41</td>
<td>52</td>
<td>41</td>
<td>52</td>
<td>92</td>
<td>36</td>
<td>69</td>
<td>82.5</td>
<td>121</td>
<td>74</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>U</th>
<th>V</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>AA</th>
<th>BB</th>
<th>CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE 1</td>
<td>1.5</td>
<td>57.5</td>
<td>43</td>
<td>25</td>
<td>42</td>
<td>2</td>
<td>14</td>
<td>45.5</td>
</tr>
<tr>
<td>SIZE 2</td>
<td>1</td>
<td>73</td>
<td>56</td>
<td>35</td>
<td>53</td>
<td>2</td>
<td>20</td>
<td>159</td>
</tr>
<tr>
<td>SIZE 3</td>
<td>4</td>
<td>68.5</td>
<td>71</td>
<td>30</td>
<td>45</td>
<td>2</td>
<td>20</td>
<td>62.5</td>
</tr>
</tbody>
</table>

\( n = \text{NUMBER OF STATIONS (MIN. 2, MAX. 10)} \)

LENGTH FORMULA
\( L_1 = 43n + 72 \)
\( L_2 = 43n + 84 \)

LENGTH FORMULA
\( L_1 = 56n + 90 \)
\( L_2 = 56n + 106 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)

LENGTH FORMULA
\( L_1 = 71n + 66 \)
\( L_2 = 71n + 90 \)
MANIFOLD DEVICENET

NOTES:
1) SIZE 1 - 1/4, 3/8, 1/2
   SIZE 2 - 3/8, 1/2, 3/4
   6 PORTS, 1, 3, 5 PORTS
2) SIZE 1 - 1/4, 3/8, 1/2
   SIZE 2 - 3/8, 1/2, 3/4
   SIZE 3 - 1/2, 3/4, 1
   2 PORTS, 2, 4 PORTS
3) ALL DIMENSIONS ARE IN MILLIMETERS

L1 = 43n + 72
L2 = 43n + 84

<table>
<thead>
<tr>
<th>SIZE 1</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE 1</td>
<td>177.5</td>
<td>119</td>
<td>9</td>
<td>50.5</td>
<td>48.5</td>
<td>58.5</td>
<td>87</td>
<td>105</td>
<td>20.5</td>
<td>26.5</td>
<td>20.5</td>
<td>30.5</td>
<td>58.5</td>
<td>22</td>
<td>45.5</td>
<td>52</td>
<td>81</td>
<td>49</td>
<td>18</td>
<td>5.5</td>
</tr>
<tr>
<td>SIZE 2</td>
<td>189.5</td>
<td>125</td>
<td>9</td>
<td>52</td>
<td>52.5</td>
<td>64.5</td>
<td>96.5</td>
<td>112</td>
<td>26</td>
<td>34</td>
<td>34</td>
<td>37</td>
<td>64.5</td>
<td>31.5</td>
<td>58.5</td>
<td>67.5</td>
<td>97.5</td>
<td>58.5</td>
<td>20.5</td>
<td>3</td>
</tr>
<tr>
<td>SIZE 3</td>
<td>234.5</td>
<td>142.5</td>
<td>13</td>
<td>77.5</td>
<td>79.5</td>
<td>92</td>
<td>108</td>
<td>123.5</td>
<td>41</td>
<td>52</td>
<td>41</td>
<td>52</td>
<td>92</td>
<td>36</td>
<td>69</td>
<td>82.5</td>
<td>121</td>
<td>74</td>
<td>28</td>
<td>4</td>
</tr>
</tbody>
</table>

n = NUMBER OF STATIONS (MIN. 2, MAX. 10)

<table>
<thead>
<tr>
<th>SIZE 1</th>
<th>U</th>
<th>V</th>
<th>W</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>AA</th>
<th>BB</th>
<th>CC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIZE 1</td>
<td>1.5</td>
<td>57.5</td>
<td>43</td>
<td>25</td>
<td>42</td>
<td>2</td>
<td>14</td>
<td>123.5</td>
<td>99.5</td>
</tr>
<tr>
<td>SIZE 2</td>
<td>1</td>
<td>73</td>
<td>56</td>
<td>35</td>
<td>53</td>
<td>2</td>
<td>20</td>
<td>146.5</td>
<td>113.5</td>
</tr>
<tr>
<td>SIZE 3</td>
<td>4</td>
<td>68.5</td>
<td>71</td>
<td>30</td>
<td>45</td>
<td>2</td>
<td>20</td>
<td>168.5</td>
<td>155.5</td>
</tr>
</tbody>
</table>

LENGTH FORMULA
L1 = 43n + 72
L2 = 43n + 84

LENGTH DIMENSIONS
SIZE 1

<table>
<thead>
<tr>
<th>n</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>158</td>
<td>201</td>
<td>244</td>
<td>287</td>
<td>330</td>
<td>373</td>
<td>416</td>
<td>459</td>
<td>502</td>
</tr>
<tr>
<td>L2</td>
<td>170</td>
<td>213</td>
<td>256</td>
<td>299</td>
<td>342</td>
<td>385</td>
<td>428</td>
<td>471</td>
<td>514</td>
</tr>
</tbody>
</table>

LENGTH DIMENSIONS
SIZE 2

<table>
<thead>
<tr>
<th>n</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>202</td>
<td>258</td>
<td>314</td>
<td>370</td>
<td>426</td>
<td>482</td>
<td>538</td>
<td>594</td>
<td>650</td>
</tr>
<tr>
<td>L2</td>
<td>218</td>
<td>274</td>
<td>330</td>
<td>386</td>
<td>442</td>
<td>498</td>
<td>554</td>
<td>610</td>
<td>666</td>
</tr>
</tbody>
</table>

LENGTH FORMULA
L1 = 71n + 66
L2 = 71n + 90

LENGTH DIMENSIONS
SIZE 3

<table>
<thead>
<tr>
<th>n</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>208</td>
<td>279</td>
<td>350</td>
<td>421</td>
<td>492</td>
<td>563</td>
<td>634</td>
<td>705</td>
<td>776</td>
</tr>
<tr>
<td>L2</td>
<td>232</td>
<td>303</td>
<td>374</td>
<td>445</td>
<td>516</td>
<td>587</td>
<td>658</td>
<td>729</td>
<td>800</td>
</tr>
</tbody>
</table>
**Precautions**

**Quality of Fluid**

1. A filter of about 5 µm is adequate.
2. Remove contaminants from the system because excess contaminants cause pneumatic product malfunctions as well as environmental pollution.
3. When there is a large amount of carbon powder from the compressor, it causes valve malfunction. Please change the compressor oil or install a mist separator.
4. The valve has been lubricated for life at manufacture, and does not require lubrication in service.
   If a lubricant is used in the system, use turbine oil (ISO VG32).

**Solenoid Precautions**

1. Ensure that voltage leakage across the coil is as follows.
   - DC coil: No more than 3% of the rated voltage
   - AC coil: No more than 20% of the rated voltage
2. Continuous duty
   - When long term energizing is required, the continuous energizing time should not exceed 30 days.
3. Energization time
   - The double solenoid valve must be energized for at least 0.1 seconds to ensure proper operation.

**Wiring & Light / Surge Voltage Suppressor**

**Piping**

1. Flushing: Thoroughly flush the piping on both inlet and outlet sides of the valve to remove dust.
2. Mounting position: Mount the double solenoid and 3-position type valves so that the spool valve will be horizontal.
3. Installation in places subject to vibration: Mount the valve so that spool valve will be at right angles to direction of vibration.
   (Avoid use in places where vibration exceeds 5G.)
4. When 3-position closed center valve is mounted: Check the piping between the valve and cylinder as well as joints for leakage using soapy water. Even slight leakage should be avoided.
5. R(EXH) port piping: Take care that exhaust air is not throttled.
   (Otherwise, delay in response or cylinder malfunction may result.)

**Operation Conditions**

Avoid the following locations or environments to prevent valve trouble.
If it is unavoidable install a cover, etc. for protection.
1. Locations where the ambient temperature exceeds +5~50ºC range.
   - The metal seal type can be used down to -10ºC, but take care that solidification of contaminants or water freezing does not take place.
2. Locations where valves will be exposed directly to water drops, cutting oil, etc.
3. Locations exposed to direct sunlight.
4. Environments causing dewing on valve body or condensation when there are drastic temperature changes.
5. Locations exposed to corrosive gas, chemicals and their solution or vapor seawater, etc.

**How to calculate Flow (At an air temperature 20°C)**

Subsonic flow: \( P_1 + 0.1013 < 1.89(P_2 + 0.1013) \)

\[
Q = 226S \sqrt{\Delta P(P_2 + 0.1013)}
\]

Sonic flow: \( P_1 + 0.1013 > 1.89(P_2 + 0.1013) \)

\[
Q = 113S(P_1 + 0.1013)
\]

\( Q \): Flow rate under standard conditions \([l/min(ANR)]\)

\( S \): Effective area \((mm^2)\)

\( \Delta P \): Pressure differential \((P_1 - P_2)(MPa)\)

\( P_1 \): Upstream pressure \((MPa)\)

\( P_2 \): Downstream pressure \((MPa)\)

* When the air temperatures is different, multiply the flow calculated with the above formula by the following factor.

<table>
<thead>
<tr>
<th>Air Temperature (C°)</th>
<th>-20</th>
<th>-10</th>
<th>0</th>
<th>10</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>1.08</td>
<td>1.06</td>
<td>1.04</td>
<td>1.02</td>
<td>0.98</td>
<td>0.97</td>
<td>0.95</td>
<td>0.94</td>
</tr>
</tbody>
</table>
The manifold Series VV81 have a wide variety of functions and portings, compatible with virtually any application.

### Standard Features

#### Common EXH Type
All the manifolded valves are supplied and exhausted by the same manifold ports. This is our most popular configuration.

#### Bottom Porting Type (A, B port)
When the application requires bottom porting, either a portion of, or the entire manifold can be piped with bottom porting.

### Manifold Option

#### Terminal Box
- Terminals are provided in the box, permitting connection of conduit piping.
- Simplifies wiring requirements

#### SI Unit
With serial interface unit
- Solenoid valve wiring reduced considerably.
- Applicable to Device Net and Profi Bus.

#### Splash Proof
Splash proof manifold conforms to IP65 and NEMA4.
- Applicable to all sizes

### Expandable Manifold
Stacking type manifold can be expanded up to the recommended number of stations. (Max. of 10 stations)

### Various porting combinations available to suit your application.
Every manifold block comes standard with side and bottom ports.

### Wide variety of Interface Options
Individual supply/exhaust spacers, interface regulators and interface speed controls are available to customize your manifold.

#### Individual EXH Spacer
An individual EXH spacer (VV81-R) mounted on the manifold block allows each valve to exhaust individually.

#### Individual SUP Spacer
An individual SUP spacer (VV81-P) mounted on the manifold block allows each valve to exhaust individually.

#### Interface Regulator
The interface unit is designated to separately control the pressure of one valve and still maintain a common manifold pressure. This unit is available as either a P port regulator or as an A or B port regulator.

#### Interface Speed Controls
Cylinder speed can be controlled by throttling exhaust air.

### Interface Options

#### Bottom Porting Type (A, B port)
When the application requires bottom porting, either a portion of, or the entire manifold can be piped with bottom porting.