

Safety Standard ISO13849-1 Certified*2 (Corresponding to Category 2 to 4)

New

3 Port Solenoid Valve/ Residual Pressure Release Valve with Detection of Main Valve Position



*1. Refer to page 2 for compliant products.



*2. Refer to page 2 for certified products.

With Detection of Main Valve Position

Category 2

The detecting function of the main valve position detects a mismatch between the input signal and valve operation.

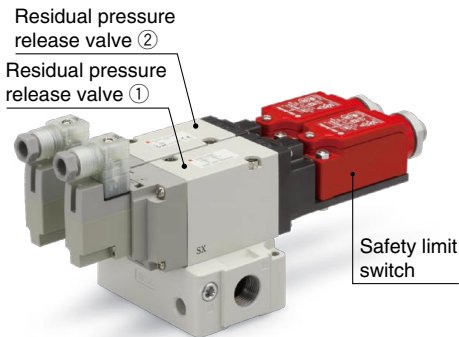


Redundant system can be constructed easily.

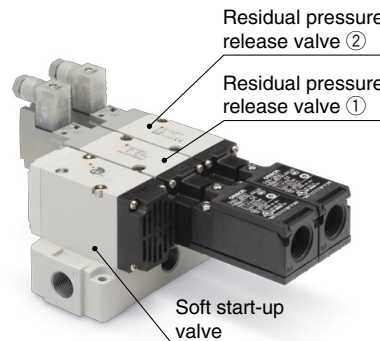
Category 3, 4

When the dual residual pressure release valve is used, if one of the valves fails to operate, the other one releases residual pressure.

Dual Residual Pressure Release Valve VP544-X538



With Soft Start-up Function VP544-X555

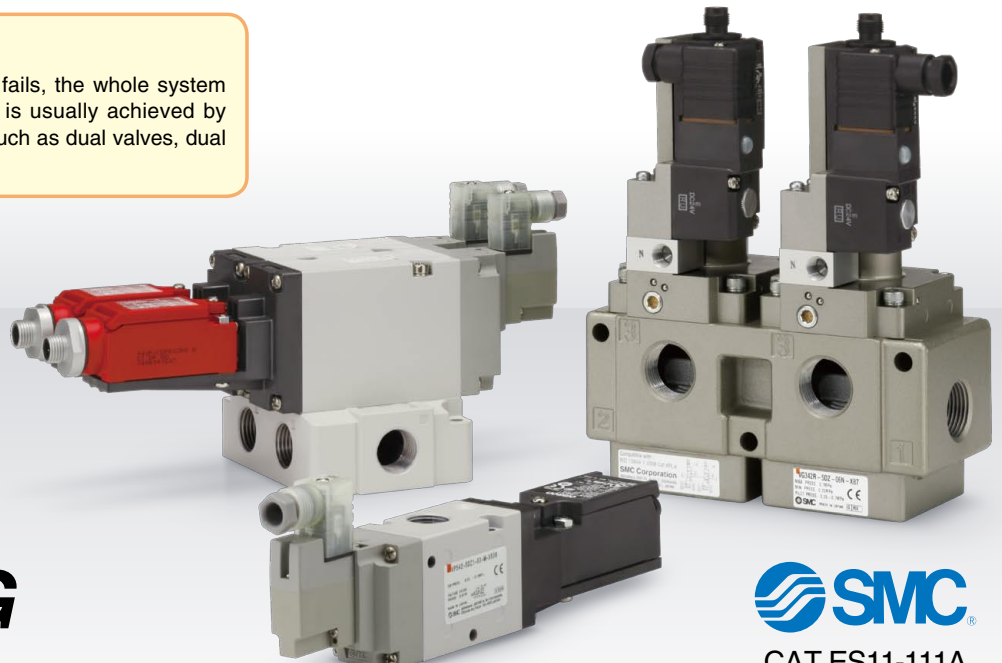


Dual Residual Pressure Release Valve VG342-X87



Redundant System

A system in which even if one part fails, the whole system will fulfill its required function. This is usually achieved by having dual channels of operation, such as dual valves, dual wiring, dual guard switches etc.



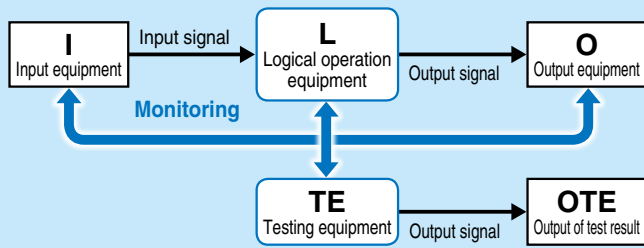
Series VP/VG



CAT.ES11-111A

With Detection of Main Valve Position (Category 2)

Category 2 Safety function can be accomplished by single channel and is automatically checked.



The detecting function of the main valve position detects a mismatch between the input signal and valve operation.

Input equipment (I): Detection equipment (sensor) of starting event
 Logical operation equipment (L): Relay sequence circuit, PLC control program
 Output equipment (O): Solenoid valve, Electromagnetic switch, Output relay
 Recommended valve: VP542/742-X536

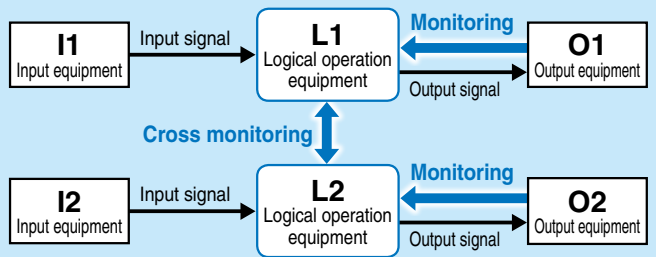


* This product is component which is a part of a safety system and safety equipment is not guaranteed by this single unit alone.

Redundant system can be constructed easily. (Category 3, 4)

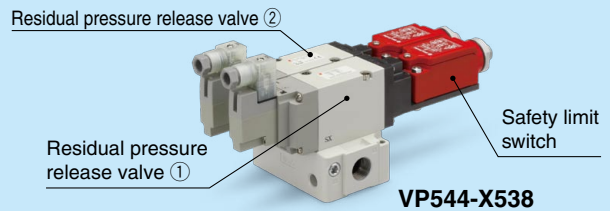
Category 3 It has redundancy so there is no loss of safety function with a single failure. The safety function must be checked before each use. An accumulation of undetected faults can cause loss of safety function.

Category 4 It has redundancy so there is no loss of safety function with a single failure. The safety function must be checked before each use. An accumulation of undetected faults does not affect the safety function. (Higher DC and MTTFd than Category 3.)



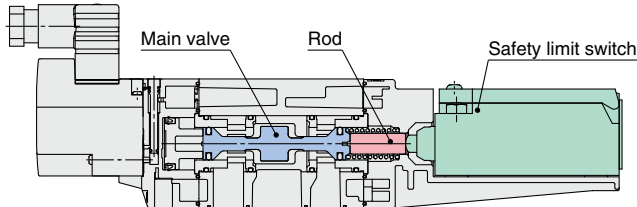
When the dual residual pressure release valve is used, if one of the valves fails to operate, the other one releases residual pressure.

Input equipment (I1, I2): Detection equipment (sensor) of starting event
 Logical operation equipment (L1, L2): Relay sequence circuit, PLC control program
 Output equipment (O1, O2): Solenoid valve, Electromagnetic switch, Output relay
 Recommended valve: VP544/744-X538, VG342-X87



Highly reliable construction

① The main valve position is detected by transferring the main valve movement directly to the reed safety limit switch with the rod.



- ② Long service life: B10d: 10 million times*
- ③ The return spring releases the residual pressure securely regardless of pressure level.

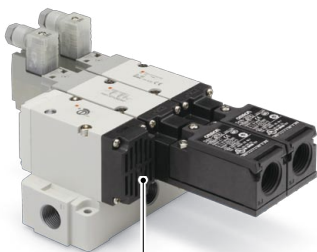
* For VP500/700, safety limit switch made by OMRON

Safety limit switch can be selected.



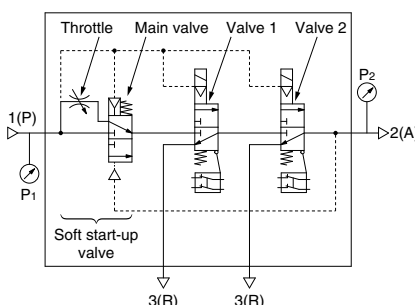
Conduit (VP series only) and M12 connector with 6 pins is available.
 M12 connector (4 pin) types are available.

With soft start-up function (-X555)

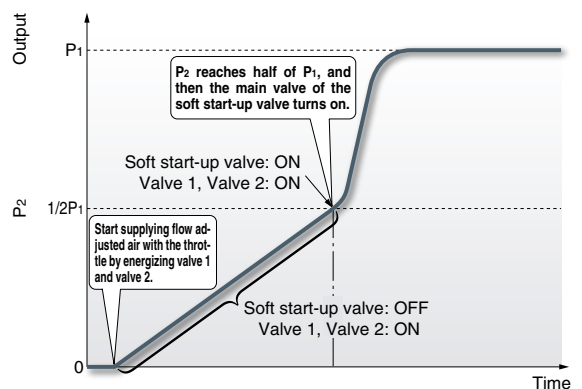


VP544-X555

- A function to gradually increase the initial pressure of the pneumatic system has been added to the dual residual pressure release valve.
- Fixed orifice and variable throttle are available as a throttle for adjusting the pressure increase. (φ1, φ1.5, φ2)



Output Pressure (P₂) vs Time Graph










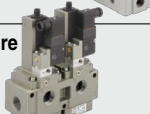
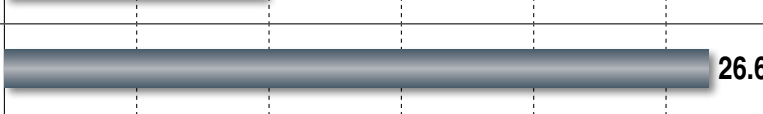


Standards and Enclosure

| Series | Category | Safety limit switch manufacturer | Standards | | | | | | Enclosure | |
|--|----------|----------------------------------|----------------------|--|------------------|------------------------|----|-----|-----------|------|
| | | | Machinery Directive | 2006/42/EC | | | CE | cUL | | RoHS |
| | | | Harmonized standards | EN ISO13849-1: 2008 EN ISO13849-2: 2008 | EN ISO4414: 2010 | EN983: 1996 + A1: 2008 | | | | |
| Residual Pressure Release Valve VP542/742-X536 Page 3 | 2 | OMRON Corporation | | ● | ● | | ● | ● | IP65 | |
| | | Rockwell Automation, Inc. | | | | | ● | ● | | |
| Dual Residual Pressure Release Valve VP544/744-X538 Page 3 | 3, 4 | OMRON Corporation | | ● | ● | | ● | ● | IP65 | |
| | | Rockwell Automation, Inc. | | | | | ● | ● | | |
| Dual Residual Pressure Release Valve with Soft Start-up Function VP544/744-X555 Page 3 | 3, 4 | OMRON Corporation | | | | | ● | ● | IP65 | |
| | | Rockwell Automation, Inc. | | | | | ● | ● | | |
| Dual Residual Pressure Release Valve VG342-X87 Page 19 | 3, 4 | OMRON Corporation | | ● | | ● | ● | ●* | IP40 | |
| | | Rockwell Automation, Inc. | | | | | ● | ● | | |

* Only port size 3/4"

Series Variations

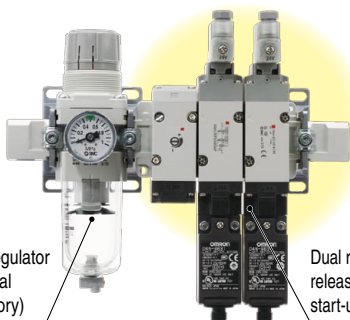
| Series | Category | Port size | Thread | Flow rate characteristics C [dm ³ /(s·bar)] 1→2 (P→A) | | | | |
|---|------------|---|--|--|----|------|------------|--|
| | | | | 5 | 10 | 15 | 20 | 25 |
| | | | | Residual Pressure Release Valve VP542-X536  | 2 | 3/8" | Rc, G, NPT |  |
| 1/2" | Rc, G, NPT |  | | | | | | |
| Dual Residual Pressure Release Valve VP544-X538  | 3, 4 | 3/8" | Rc, G, NPT |  | | | | |
| 1/2" | | Rc, G, NPT |  | | | | | |
| Dual Residual Pressure Release Valve with Soft Start-up Function VP544-X555  | 3, 4 | 3/8" | Rc, G, NPT |  | | | | |
| 1/2" | | Rc, G, NPT |  | | | | | |
| Dual Residual Pressure Release Valve VG342-X87  | 3, 4 | 3/4" | Rc, G, NPT |  | | | | |

Can be connected to Modular type F.R.L. units. [Page 17](#)

Applicable models*

- VP544/744-X538
- VP544/744-X555

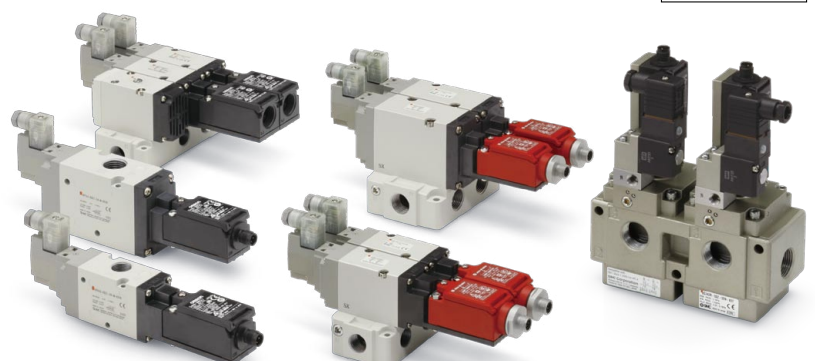
* Please contact SMC for the VP542/742-X536.



Filter regulator (Optional accessory)

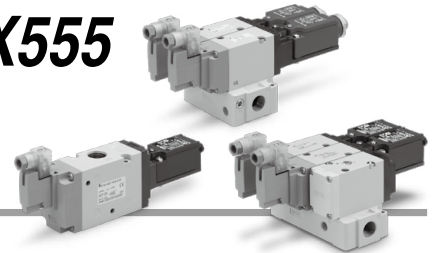
Dual residual pressure release valve with soft start-up function

For details about Safety Standard ISO13849-1, refer to "Guide to Products Conforming to International Standards" on the SMC website.



3 Port Solenoid Valve/Residual Pressure Release Valve with Detection of Main Valve Position

VP500/700-X536, X538, X555



How to Order

Residual pressure release valve

VP 5 4 2 R - 5 D Z 1 - 03 [] - M [] - X536

Dual residual pressure release valve

VP 5 4 4 R - 5 D Z 1 - 03 [] - M A - X538

Dual residual pressure release valve with soft start-up function

VP 5 4 4 [] - 5 D Z 1 - 03 [] - M [] [] - X555

Series

| | |
|---|-------|
| 5 | VP500 |
| 7 | VP700 |

Body

| | |
|---|--------------|
| 2 | Body ported |
| 4 | Base mounted |

Pilot

| | |
|-----|----------------|
| Nil | Internal pilot |
| R | External pilot |

Voltage

| | |
|---|--------|
| 5 | 24 VDC |
|---|--------|

Electrical entry

| | |
|---|-----------------------------|
| D | DIN terminal |
| Y | DIN (EN175301-803) terminal |

* Refer to page 18 for details about type Y.

Light/surge voltage suppressor

| | |
|---|-------------------------------------|
| Z | With light/surge voltage suppressor |
|---|-------------------------------------|

Port size

| | Port size | VP500 | VP700 |
|----|-----------|-------|-------|
| 03 | 3/8" | ● | — |
| 04 | 1/2" | — | ● |

Thread

| | |
|-----|-----|
| Nil | Rc |
| F | G |
| N | NPT |

Throttle

| | |
|-----|--------------------|
| Nil | Variable throttle |
| 10 | ø1 fixed orifice |
| 15 | ø1.5 fixed orifice |
| 20* | ø2 fixed orifice |

* VP700 only

Safety limit switch/Wiring

| | |
|-----|---|
| Nil | G1/2 (Made by OMRON) |
| M | M12 connector (Made by OMRON) |
| S1 | M12 connector (Made by Rockwell Automation) |

With check valve (Only external pilot)

| | Check valve | Applicable tube O.D. | Thread | | |
|-----|-------------|----------------------|--------|---|-----|
| | | | Rc | G | NPT |
| Nil | None | — | ● | ● | ● |
| A | Yes | ø6 | ● | — | — |
| B | | | — | — | ● |

* For internal pilot, the symbol is nil.

* Refer to "Piping for External Pilot Type" on page 4 for selection of the check valve.

Made to Order

1 Series Compatible with Secondary Batteries

For details about 25A-, refer to the WEB catalog "Series Compatible with Secondary Batteries/Series 25A-."

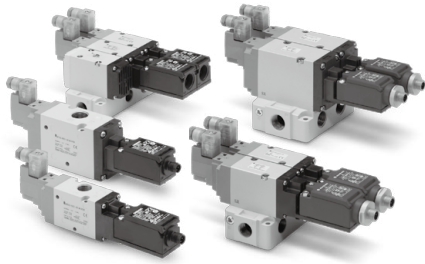
How to Order

25A-VP [] 4 [] [] - 5 D Z 1 - [] [] [] - [] [] [] - X536
 X538
 X555

● Fill in according to How to Order above.

● Secondary battery compatible

Note) Electrical entry can be selected only for D type. Check valve type is available only when the thread type is Rc.



Valve Specifications

| | | |
|-----------------------------------|---|--|
| Fluid | Air | |
| Type of actuation | N.C. (Spring return) | |
| Operation | Internal pilot | External pilot |
| Operating pressure range | 0.25 to 0.7 MPa | 0.25 to 0.7 MPa |
| External pilot pressure | — | 0.25 to 0.7 MPa (Same as operating pressure) |
| Maximum operating frequency | 30 times/minute | |
| Minimum operating frequency | 1 time/week | |
| Operating and ambient temperature | -10 to 50°C (No freezing) | |
| Ambient humidity | 20 to 90%RH (No condensation) | |
| Manual override | None | |
| Pilot exhaust | Individual exhaust | |
| Lubrication | Not required | |
| Mounting orientation | Unrestricted | |
| Impact/Vibration resistance | 150/30 m/s ² | |
| Enclosure | IP65 | |
| Operating environment | Indoors | |
| B10d (MTTFd calculation) | 10000000 times (for the safety limit switch made by OMRON) 1000000 times (for the safety limit switch made by Rockwell Automation) | |

Internal Pilot Type

⚠ Caution

Valve may not operate properly when air supply to P port is not adequate and the supply pressure to the valve is lower than 0.25 MPa, the minimum operating pressure. Be careful with insufficient supply pressure.

Piping for External Pilot Type

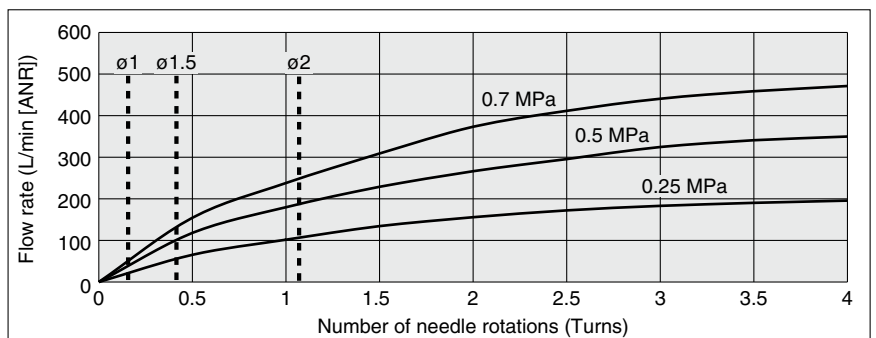
⚠ Caution

The product may not operate when the external pilot pressure is insufficient due to simultaneous operation or restricted air piping. In this case, use the check valve (AKH series) with the external pilot port, change the piping size or adjust the set pressure to provide a constant pressure of 0.25 MPa or more.

Flow Rate Characteristics / Weight

| Series | Flow rate characteristics | | | | | | Weight [g] |
|------------|------------------------------|------|-----|------------------------------|------|-----|------------|
| | 1→2 (P→A) | | | 2→3 (A→R) | | | |
| | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv | |
| VP542-X536 | 8.9 | 0.16 | 2.2 | 8.9 | 0.20 | 2.1 | 350 |
| VP742-X536 | 15.1 | 0.21 | 3.6 | 15.3 | 0.22 | 3.7 | 590 |
| VP544-X538 | 6.5 | 0.08 | 1.3 | 6.7 | 0.10 | 1.3 | 930 |
| VP744-X538 | 10.3 | 0.08 | 2.3 | 9.7 | 0.08 | 2.1 | 1510 |
| VP544-X555 | 5.2 | 0.06 | 1.1 | 6.7 | 0.10 | 1.3 | 1105 |
| VP744-X555 | 9.8 | 0.08 | 2.1 | 9.7 | 0.08 | 2.1 | 2000 |

Needle Valve / Flow Rate Characteristics (VP544/744-X555)



Solenoid Specifications

| | |
|-------------------------------|--------------|
| Electrical entry | DIN terminal |
| Rated voltage | 24 VDC |
| Allowable voltage fluctuation | ±10% |
| Power consumption | 0.45 W |
| Surge voltage suppressor | Varistor |
| Indicator | LED |

Safety Limit Switch Specifications

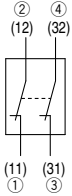
| | | |
|-----------------------------------|-------------------------------|-------------------------------|
| Manufacturer | OMRON | Rockwell Automation |
| Electrical wiring | G1/2, M12 connector | M12 connector |
| Contact resistance | 25 mΩ or less | 50 mΩ or less |
| Min. applicable load | 5 VDC, 1 mA (Load resistance) | 5 VDC, 5 mA (Load resistance) |
| Max. voltage | 24 VDC | |
| Max. load current | 50 mA | |
| Max. load inductance | 0.5 H | |
| Insulation voltage | 300 V | 600 V |
| Protection against electric shock | Class II (EN60947-5-1: 2004) | |

VP500/700-X536, X538, X555

Symbols

Safety limit switch
Made by
OMRON

Symbol

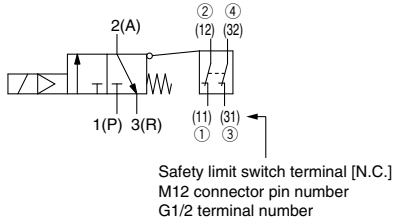


Terminal/Pin Numbers (Built-in switch 2N.C.)

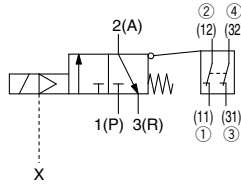
| M12 connector pin number | Wiring specification | G1/2 terminal number | Wiring specification |
|--------------------------|----------------------|----------------------|----------------------|
| ① | | (11) | |
| ② | | (12) | |
| ③ | (31) | | |
| ④ | (32) | | |

VP542(R)/742(R)-X536

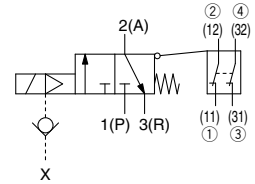
Internal pilot



External pilot

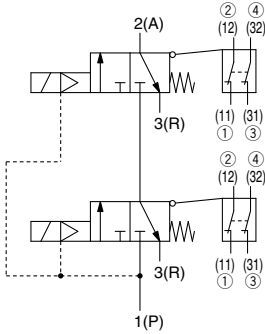


External pilot/With check valve

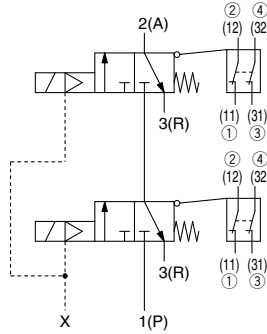


VP544(R)/744(R)-X538

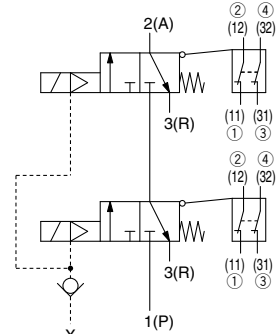
Internal pilot



External pilot

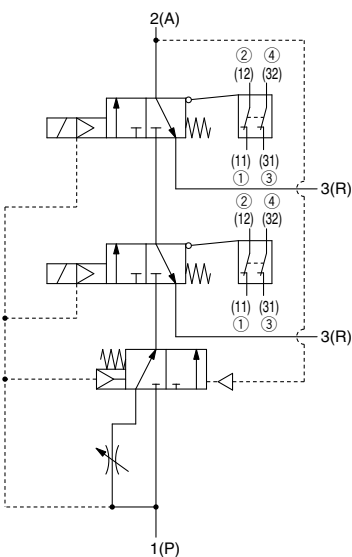


External pilot/With check valve

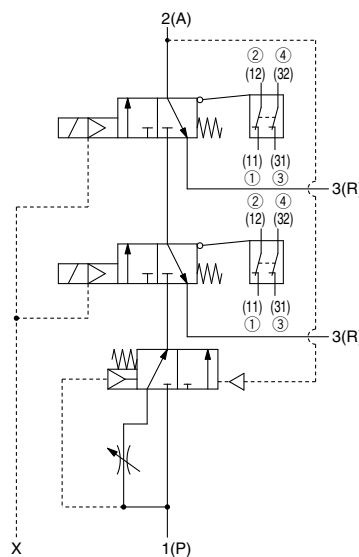


VP544(R)/744(R)-X555

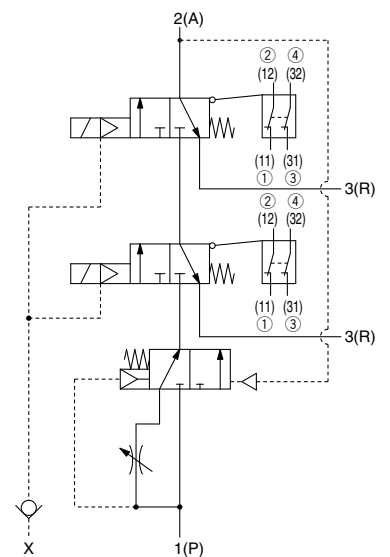
Internal pilot



External pilot



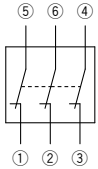
External pilot/With check valve



Symbols

Safety limit switch
Made by
Rockwell Automation

Symbol

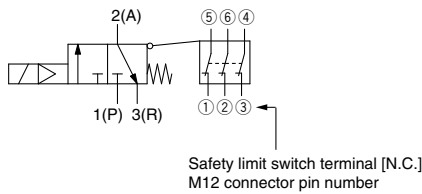


Pin Numbers (Built-in switch 3N.C.)

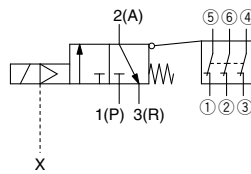
| M12 connector pin number | Wiring specification |
|--------------------------|----------------------|
| ① | |
| ⑤ | |
| ② | |
| ⑥ | |
| ③ | |
| ④ | |

VP542(R)/742(R)-X536

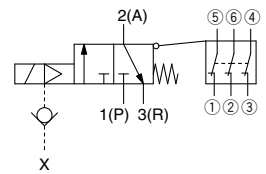
Internal pilot



External pilot

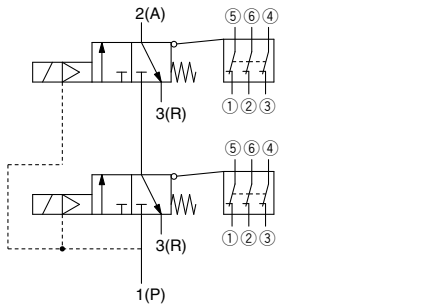


External pilot/With check valve

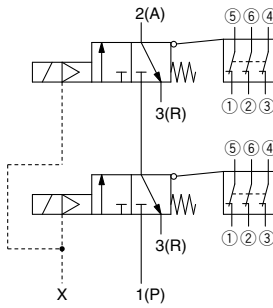


VP544(R)/744(R)-X538

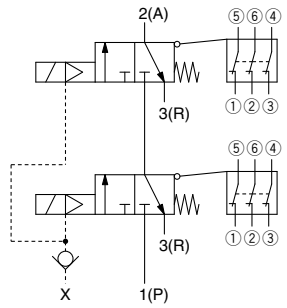
Internal pilot



External pilot

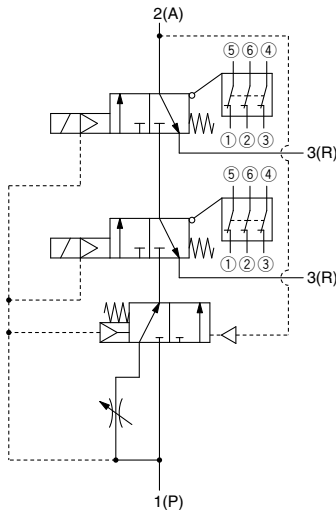


External pilot/With check valve

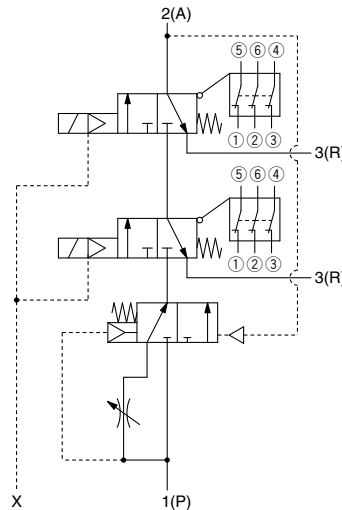


VP544(R)/744(R)-X555

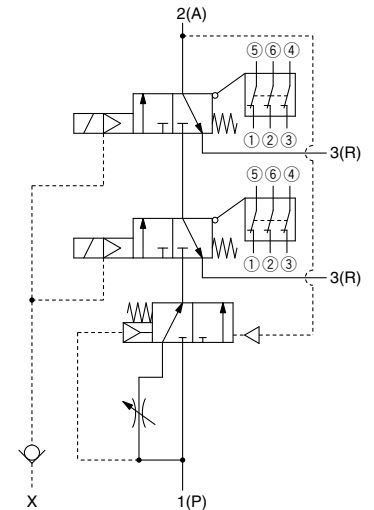
Internal pilot



External pilot



External pilot/With check valve



VP500/700
Symbols
X536
X538
X555
Optional Accessories
Specific Product Precautions
VG342
Symbols
X87
Specific Product Precautions

VP500/700-X536

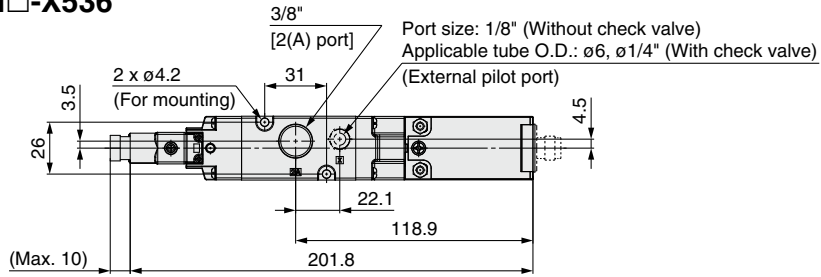
Dimensions

Residual Pressure Release Valve (-X536)

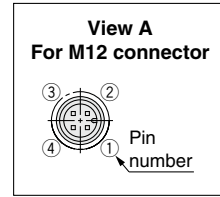
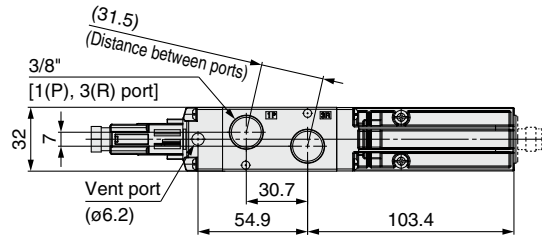
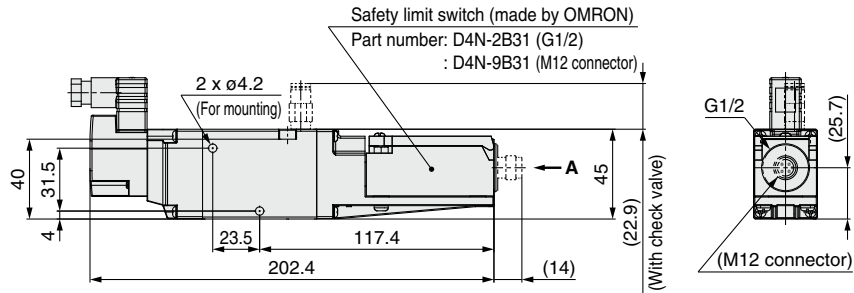
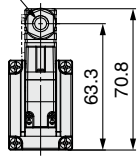
VP542(R)-5^DZ1-03□-□-X536

VP542(R)-5^DZ1-03□-M□-X536

Safety limit switch
Made by OMRON

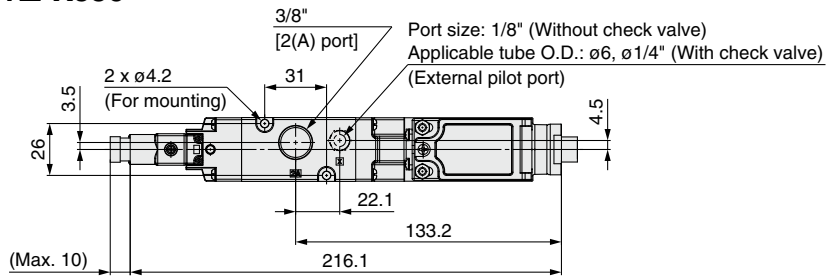


Applicable cable O.D.
ø3.5 to ø7

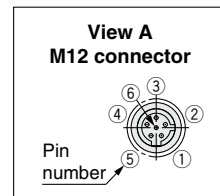
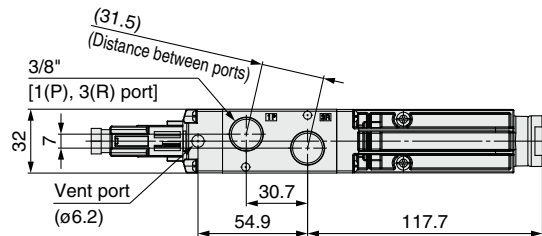
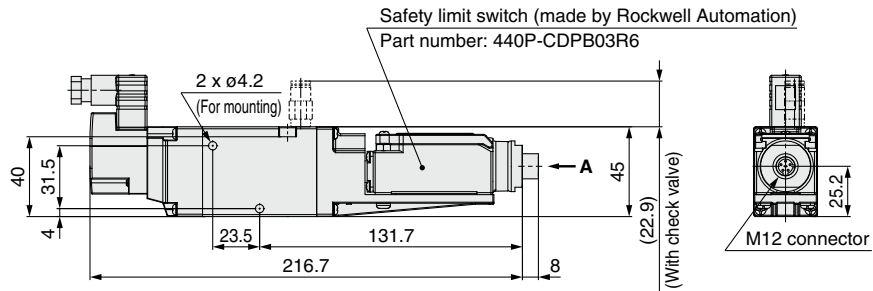
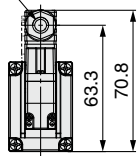


VP542(R)-5^DZ1-03□-S1□-X536

Safety limit switch
Made by Rockwell Automation



Applicable cable O.D.
ø3.5 to ø7

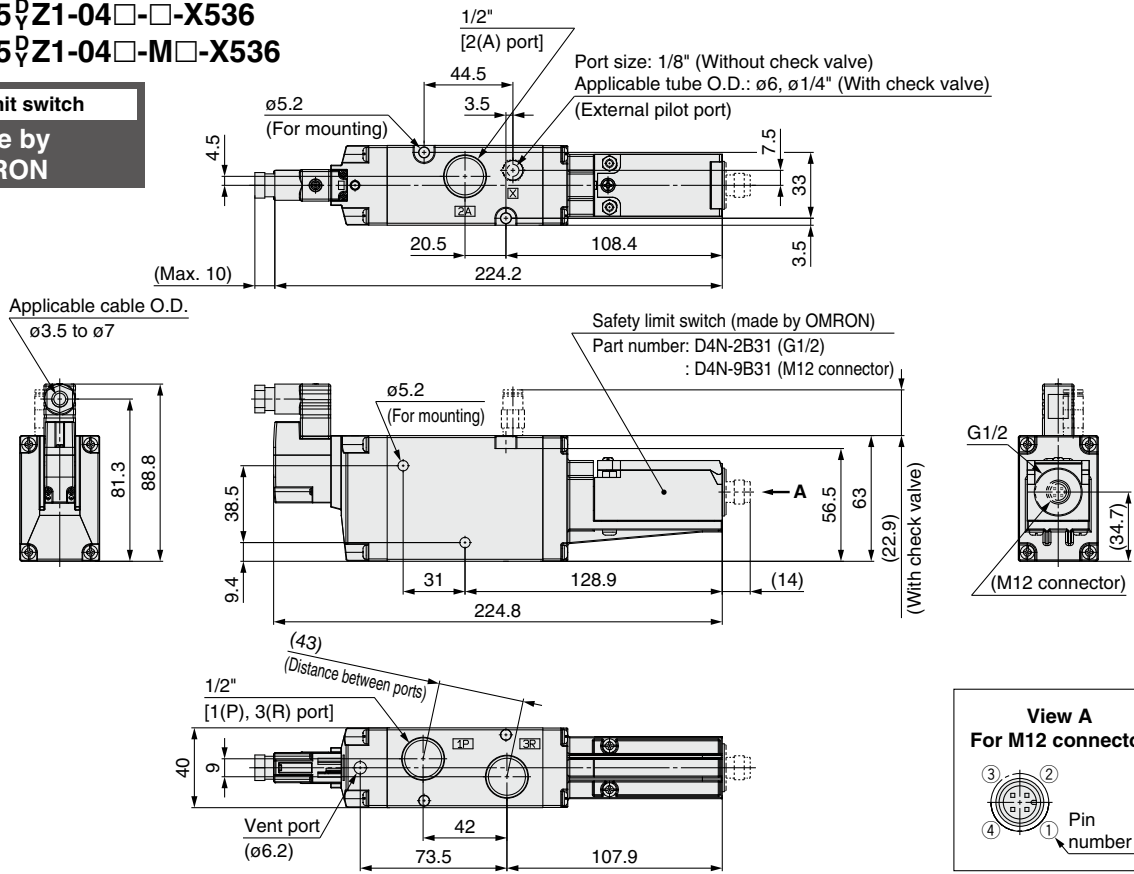


Dimensions

Residual Pressure Release Valve (-X536)

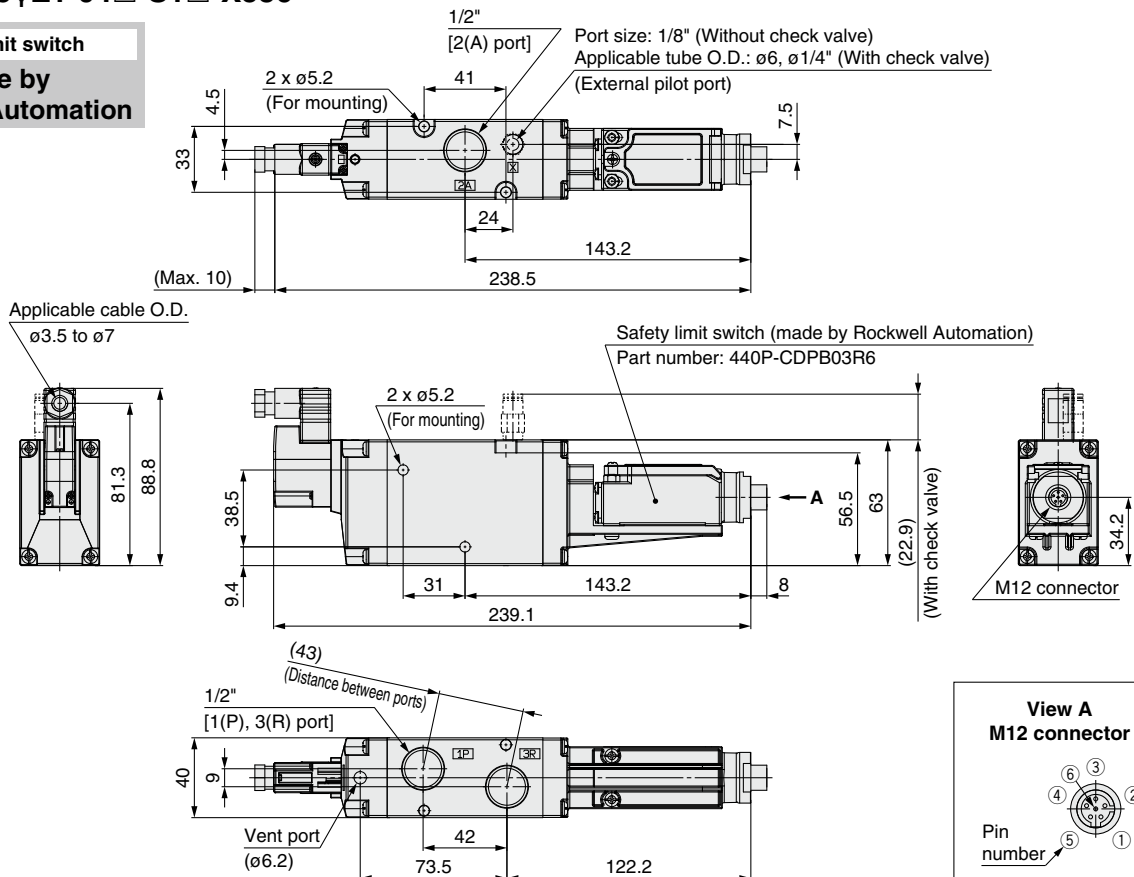
VP742(R)-5^DZ1-04□-□-X536
VP742(R)-5^DZ1-04□-M□-X536

Safety limit switch
Made by OMRON



VP742(R)-5^DZ1-04□-S1□-X536

Safety limit switch
Made by Rockwell Automation



VP500/700-X538

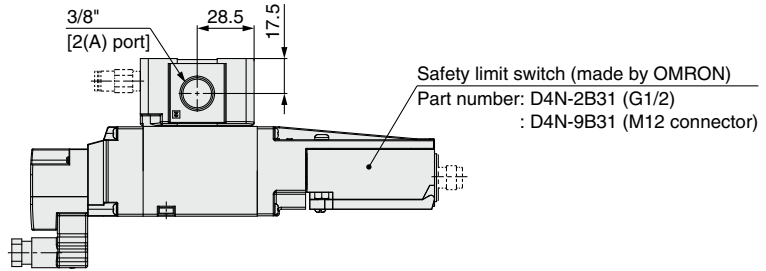
Dimensions

Dual Residual Pressure Release Valve (-X538)

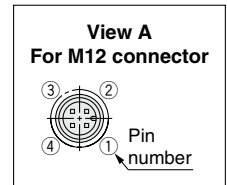
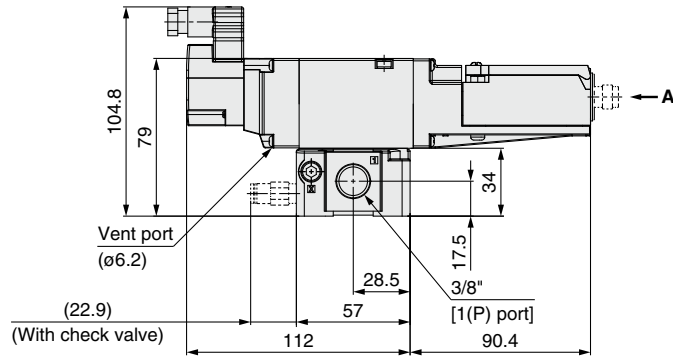
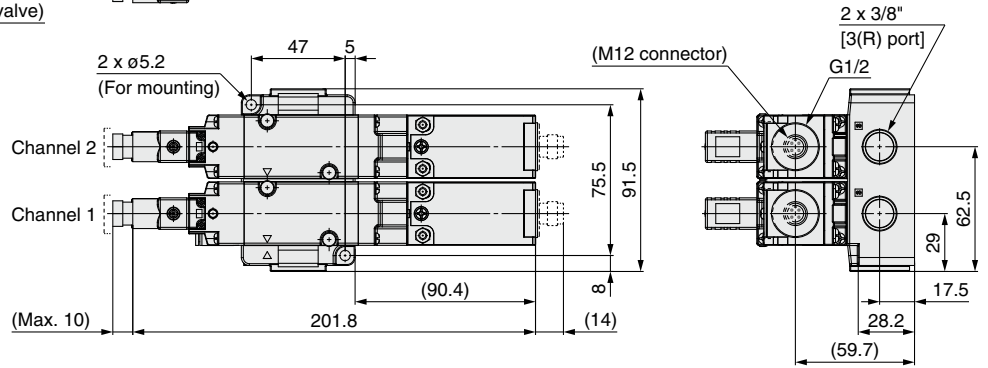
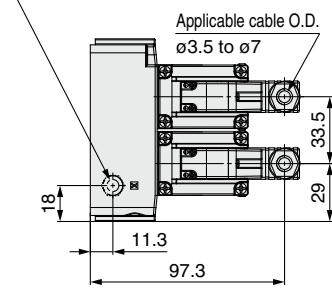
VP544(R)-5^D_YZ1-03□-□-X538

VP544(R)-5^D_YZ1-03□-M□-X538

Safety limit switch
Made by
OMRON



Port size: 1/8" (Without check valve)
Applicable tube O.D.: ø6, ø1/4" (With check valve)
(External pilot port)

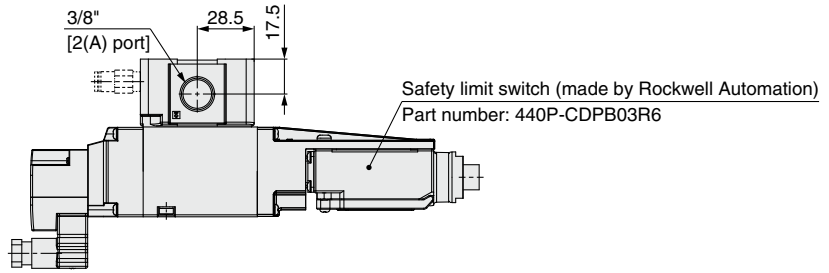


Dimensions

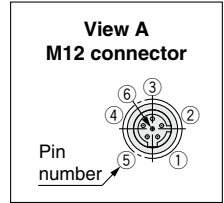
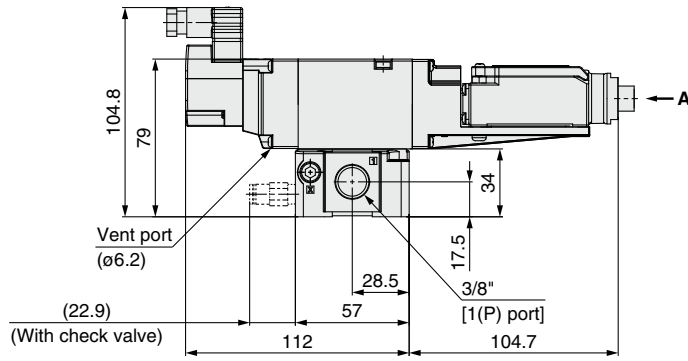
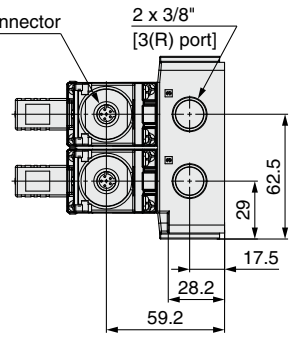
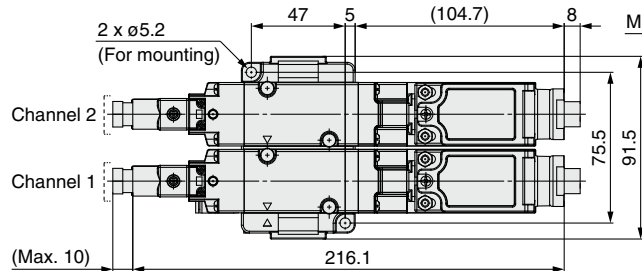
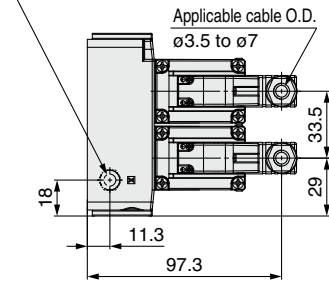
Dual Residual Pressure Release Valve (-X538)

VP544(R)-5^DZ1-03□-S1□-X538

Safety limit switch
Made by
Rockwell Automation



Port size: 1/8" (Without check valve)
Applicable tube O.D.: ø6, ø1/4" (With check valve)
(External pilot port)



VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

Specific Product Precautions

VP500/700-X538

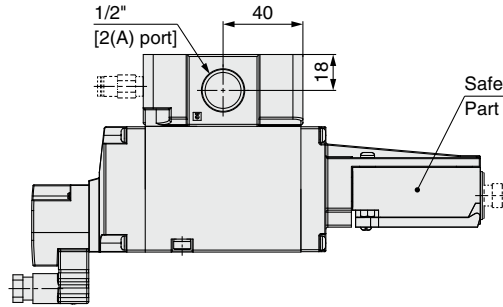
Dimensions

Dual Residual Pressure Release Valve (-X538)

VP744(R)-5^DZ1-04□-□-X538

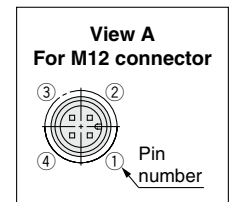
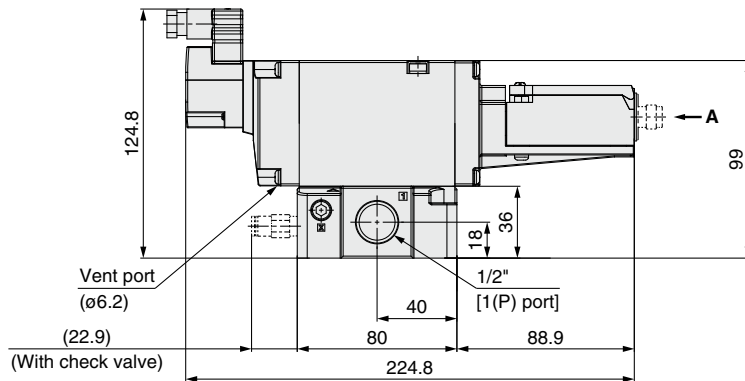
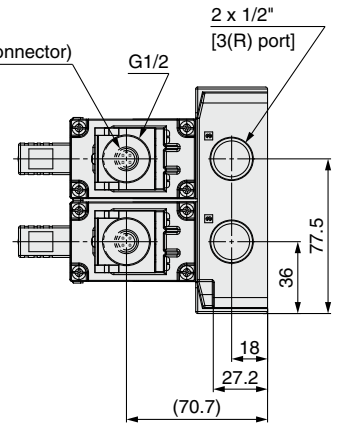
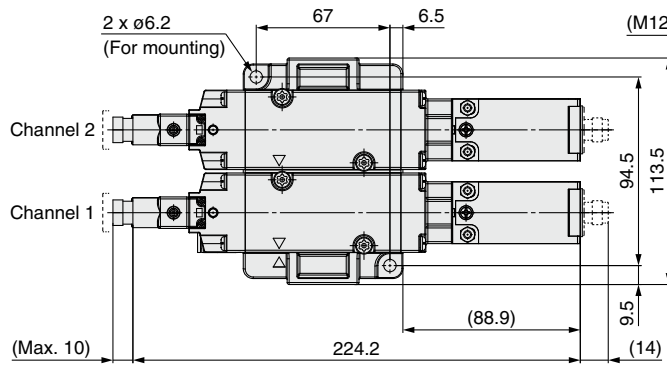
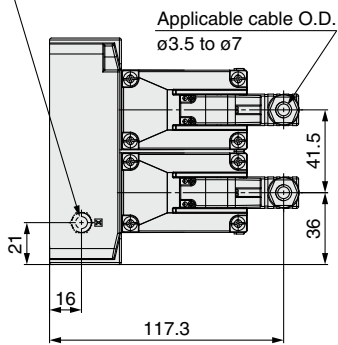
VP744(R)-5^DZ1-04□-M□-X538

Safety limit switch
Made by
OMRON



Safety limit switch (made by OMRON)
Part number: D4N-2B31 (G1/2)
: D4N-9B31 (M12 connector)

Port size: 1/8" (Without check valve)
Applicable tube O.D.: ø6, ø1/4" (With check valve)
(External pilot port)

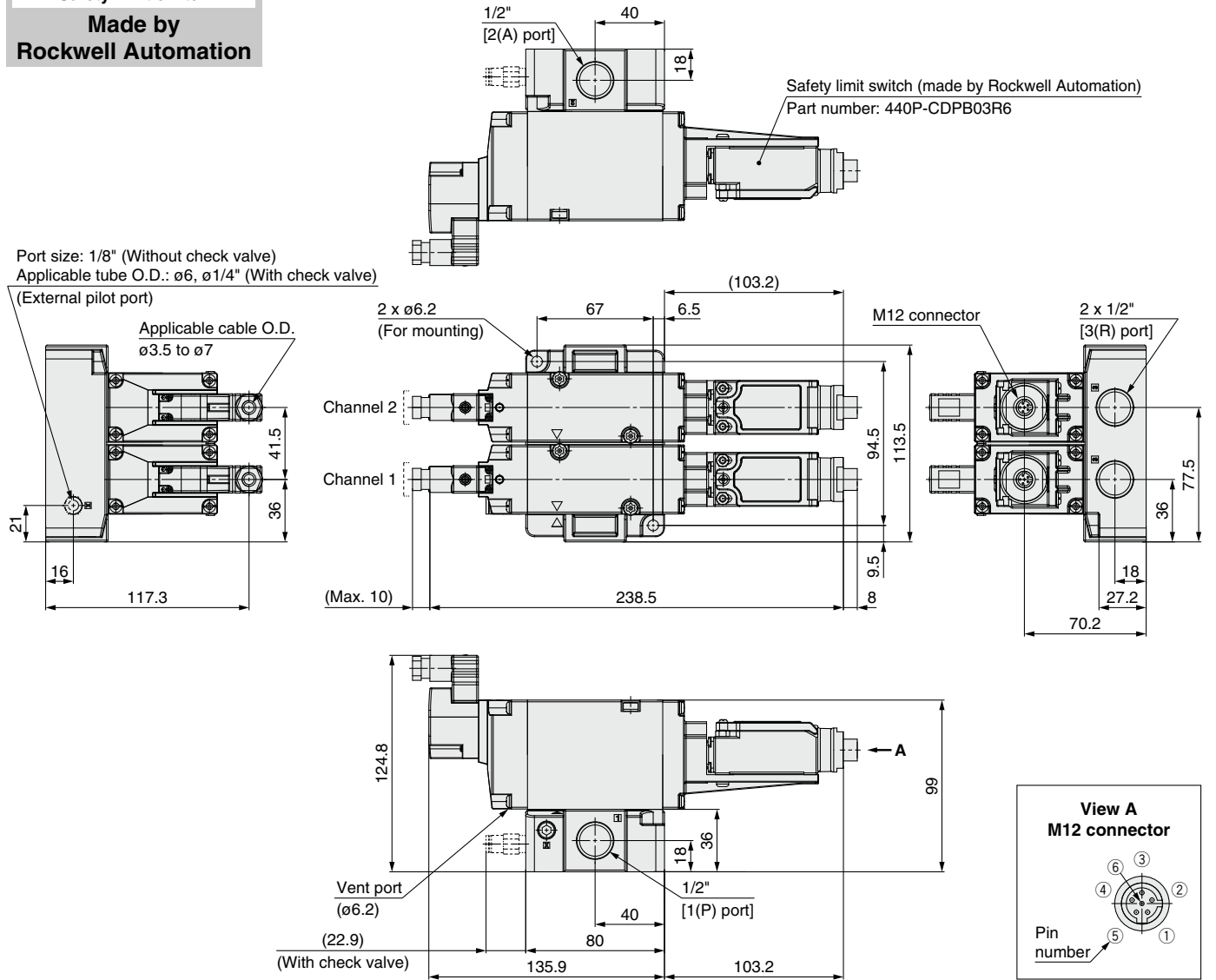


Dimensions

Dual Residual Pressure Release Valve (-X538)

VP744(R)-5^DZ1-04□-S1□-X538

Safety limit switch
Made by
Rockwell Automation



VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

Specific Product Precautions

VP500/700-X555

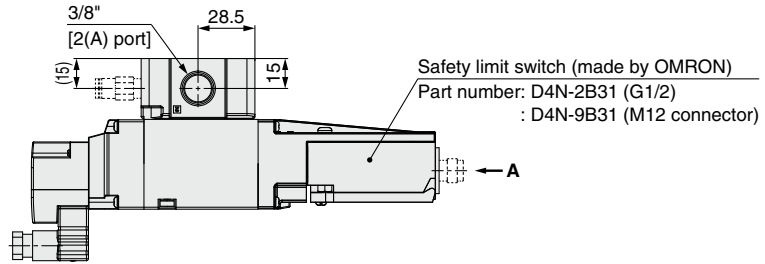
Dimensions

Dual Residual Pressure Release Valve with Soft Start-up Function (-X555)

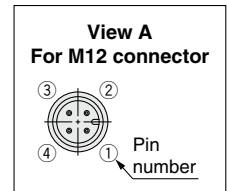
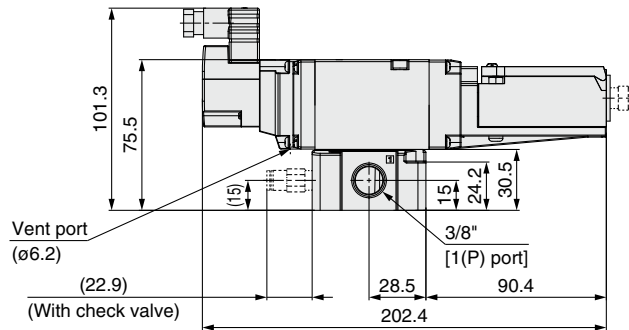
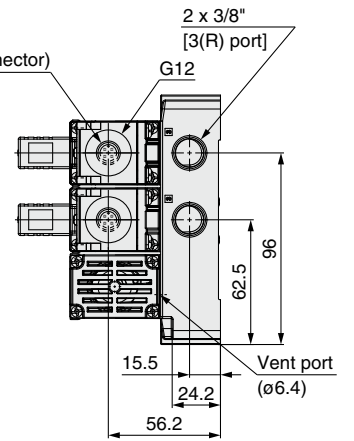
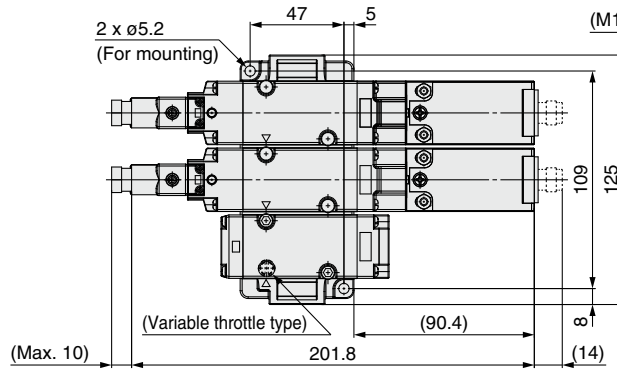
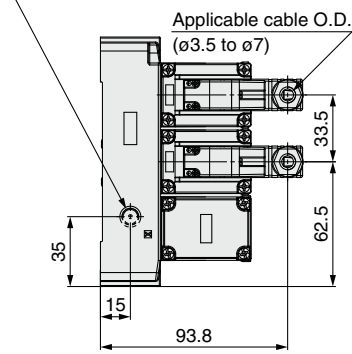
VP544(R)-5^DZ1-03□-□□-X555

VP544(R)-5^DZ1-03□-M□□-X555

Safety limit switch
Made by
OMRON



Port size: 1/8" (Without check valve)
Applicable tube O.D.: $\phi 6$, $\phi 1/4$ " (With check valve)
(External pilot port)

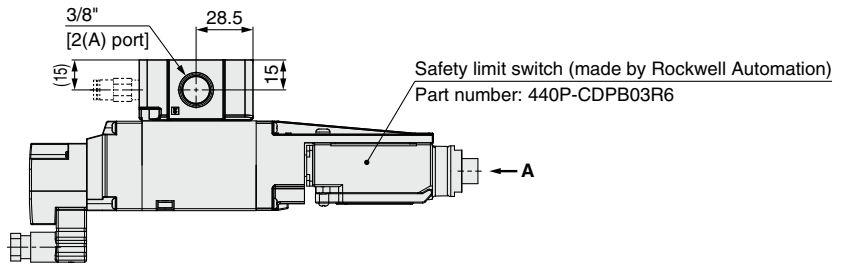


Dimensions

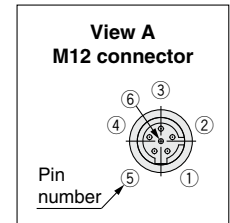
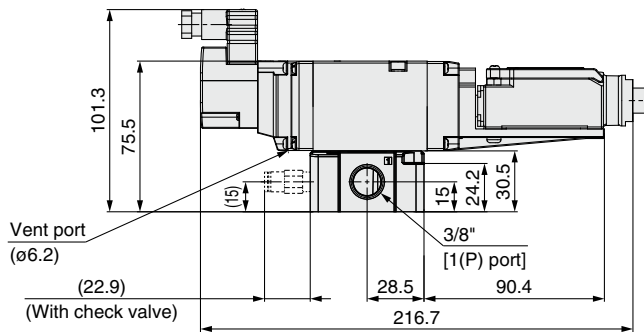
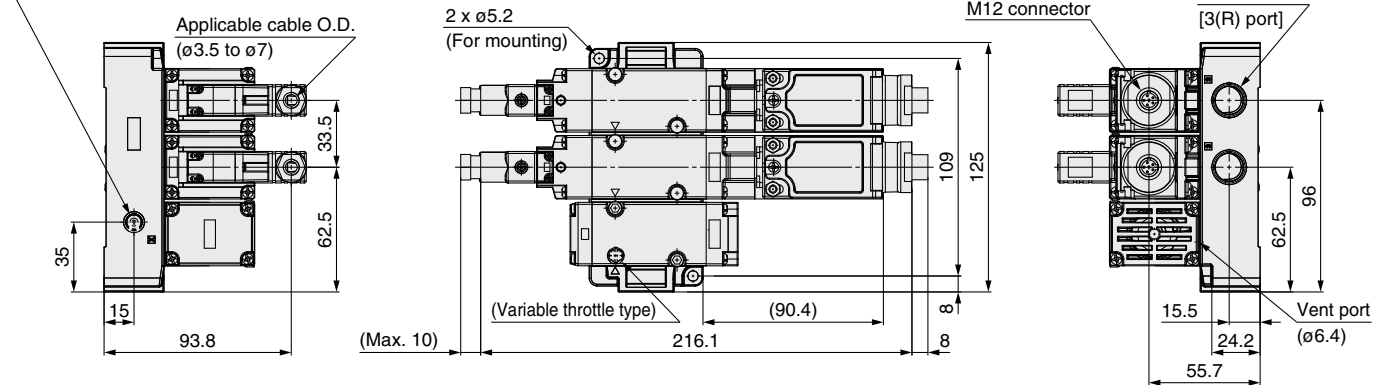
Dual Residual Pressure Release Valve with Soft Start-up Function (-X555)

VP544(R)-5^DZ1-03□-S1□□-X555

Safety limit switch
Made by
Rockwell Automation



Port size: 1/8" (Without check valve)
Applicable tube O.D.: ø6, ø1/4" (With check valve)
(External pilot port)



VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

Specific Product Precautions

VP500/700-X555

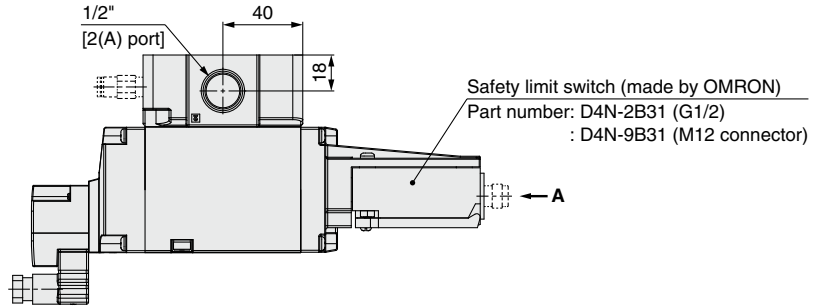
Dimensions

Dual Residual Pressure Release Valve with Soft Start-up Function (-X555)

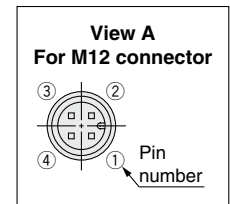
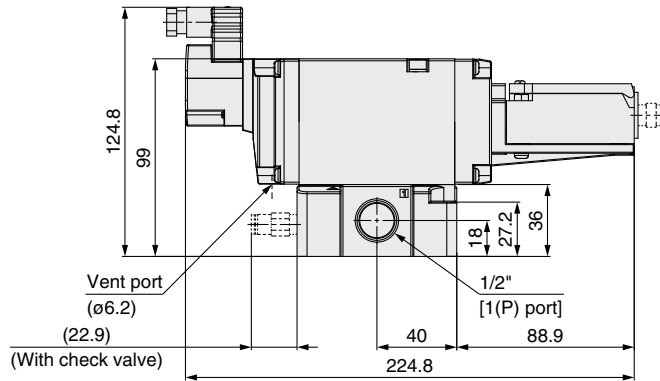
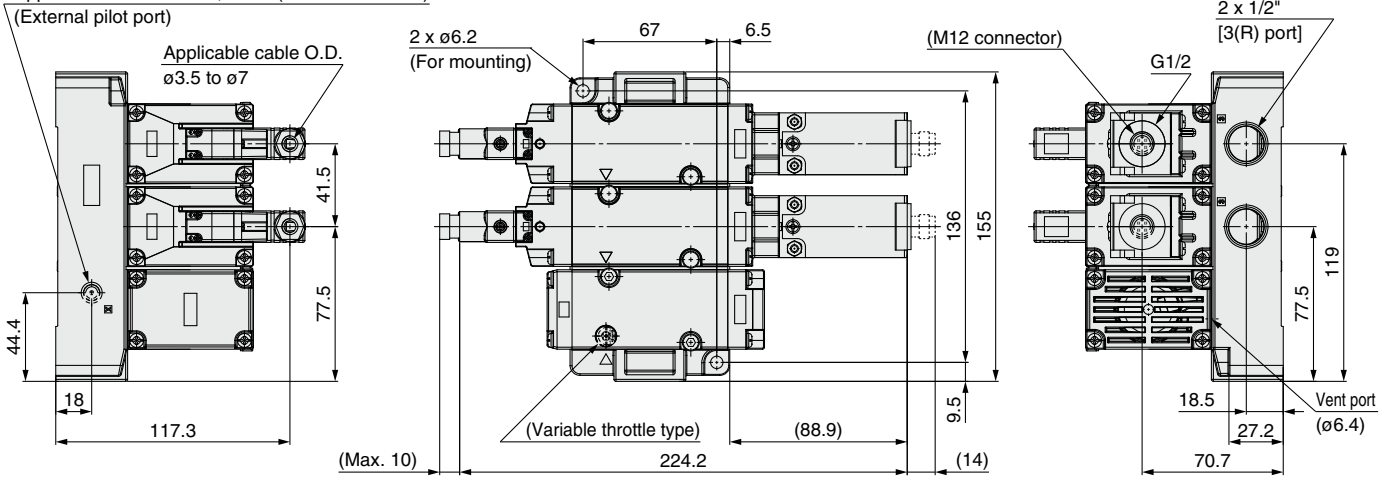
VP744(R)-5^D_YZ1-04□-□□-X555

VP744(R)-5^D_YZ1-04□-M□□-X555

Safety limit switch
Made by
OMRON



Port size: 1/8" (Without check valve)
Applicable tube O.D.: $\phi 6$, $\phi 1/4$ " (With check valve)
(External pilot port)

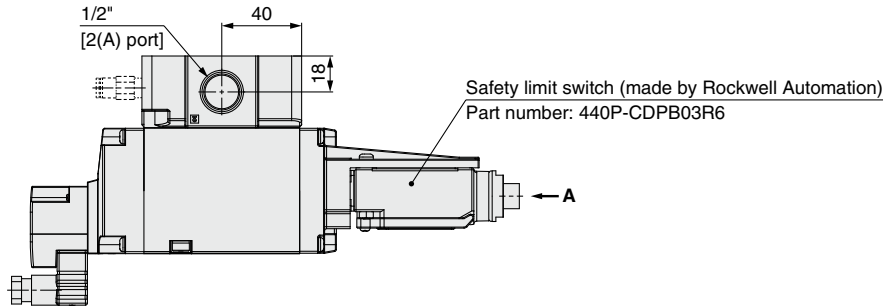


Dimensions

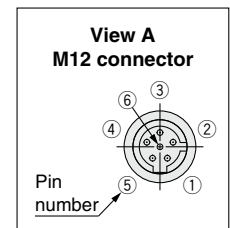
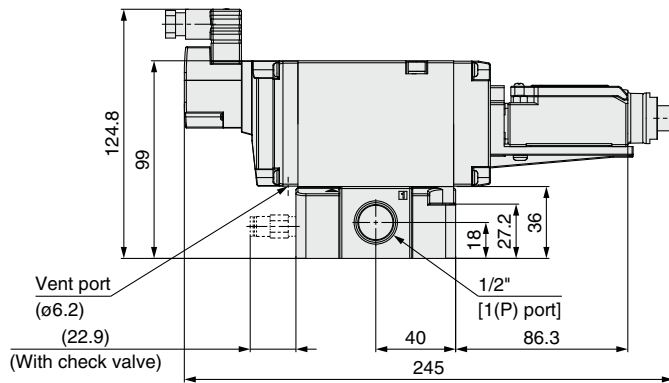
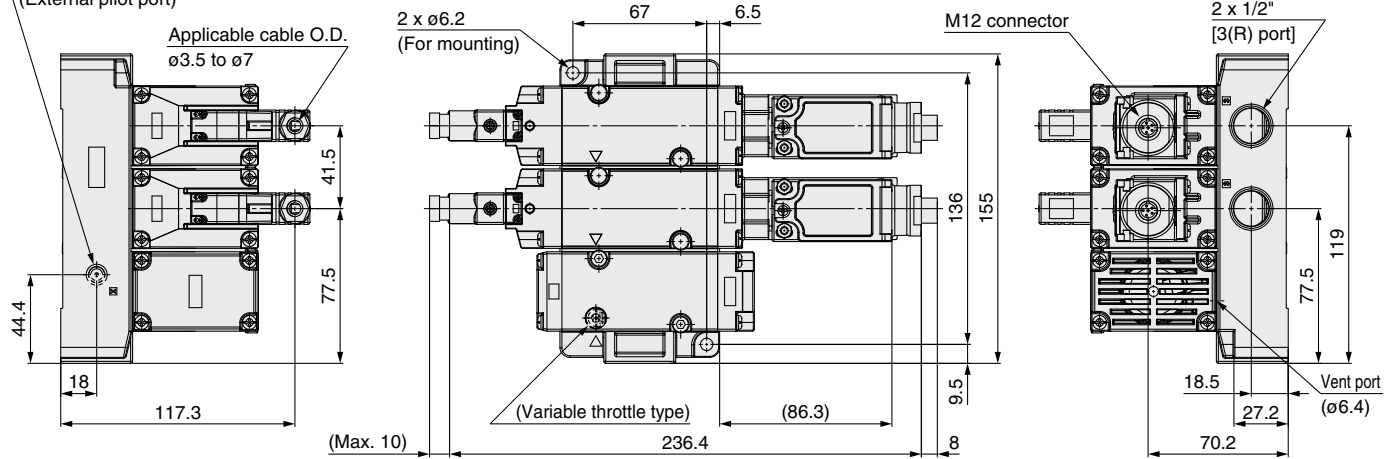
Dual Residual Pressure Release Valve with Soft Start-up Function (-X555)

VP744(R)-5^DZ1-04□-S1□□-X555

Safety limit switch
Made by
Rockwell Automation



Port size: 1/8" (Without check valve)
Applicable tube O.D.: $\phi 6$, $\phi 1/4$ " (With check valve)
(External pilot port)



VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

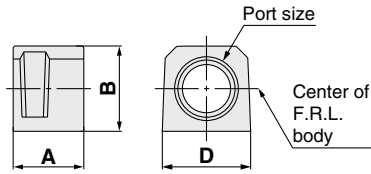
Specific Product Precautions

VP500/700-X538, X555 Optional Accessories

For details about optional accessories, refer to the **WEB catalog**.

Piping Adapter: 3/8, 1/2

A piping adapter allows installation/removal of the component without removing the piping and thus makes maintenance easier.



| Part no. (Note) | Port size | A | B | D |
|-----------------|-----------|------|----|----|
| E300-□03-A | 3/8 | 31.8 | 30 | 30 |
| E400-□04-A | 1/2 | 31.8 | 36 | 36 |

Note) □ in part numbers indicates a pipe thread type. No indication is necessary for Rc; however, indicate N for NPT, and F for G.

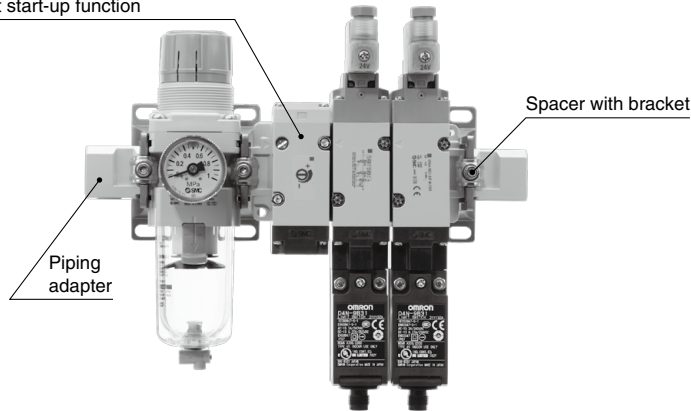
* Separate interfaces are required for modular unit.

Ordering Example*

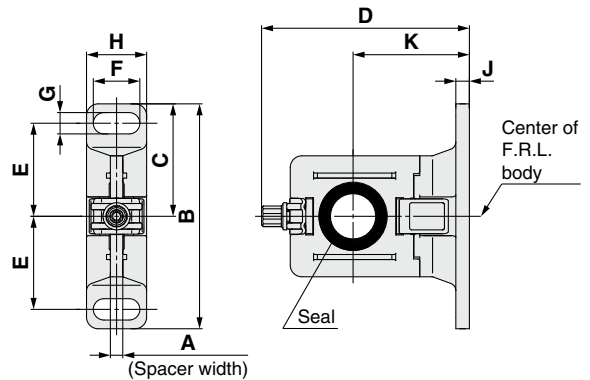
- VP544-5DZ1-03-X538 1 pc.
- Filter regulator
AW30-03G-A 1 pc.
- Spacer with bracket
Y300T-A 3 pcs.
- Piping adapter
E300-03-A 2 pcs.

* Each product is not assembled.

Dual residual pressure release valve with soft start-up function



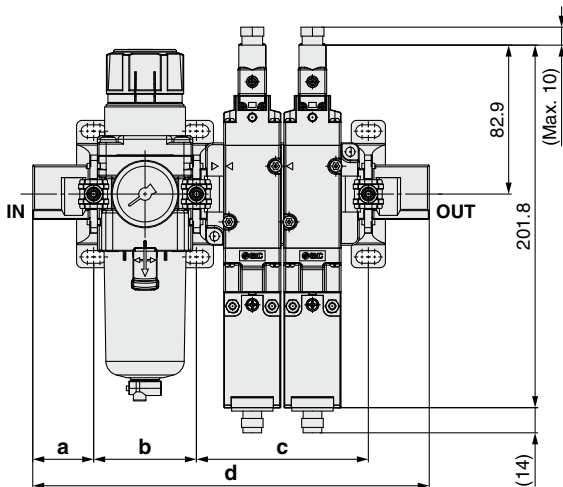
Spacer with Bracket



| Part no. | A | B | C | D | E | F | G | H | J | K |
|----------|-----|----|----|------|----|----|---|----|---|----|
| Y300T-A | 4.2 | 82 | 41 | 71.5 | 35 | 14 | 7 | 19 | 4 | 41 |
| Y400T-A | 5.2 | 96 | 48 | 86.1 | 40 | 18 | 9 | 26 | 5 | 50 |

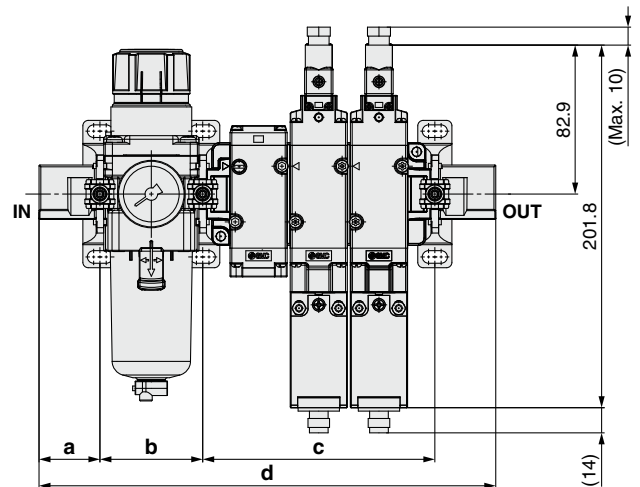
Spacer with Bracket Mounting Position

Dual residual pressure release valve (-X538)



| Model | a | b | c | d | Note |
|--------------------|------|------|-------|-------|------------------------------------|
| VP544-5DZ1-03-X538 | 33.9 | 57.2 | 95.7 | 220.7 | AW30-03G-A Y300T-A E300-03-A |
| VP744-5DZ1-04-X538 | 34.4 | 75.2 | 118.7 | 262.7 | AW40-04G-A Y400T-A E400-04-A |

Dual residual pressure release valve with soft start-up function (-X555)



| Model | a | b | c | d | Note |
|--------------------|------|------|-------|-------|------------------------------------|
| VP544-5DZ1-03-X555 | 33.9 | 57.2 | 129.2 | 254.2 | AW30-03G-A Y300T-A E300-03-A |
| VP744-5DZ1-04-X555 | 34.4 | 75.2 | 160.2 | 304.2 | AW40-04G-A Y400T-A E400-04-A |



VP500/700-X536, X538, X555

Specific Product Precautions

Be sure to read this before handling. Refer to the back cover for Safety Instructions. For 3/4/5 Port Solenoid Valve Precautions, refer to “Handling Precautions for SMC Products” and the Operation Manual on the SMC website, <http://www.smcworld.com>

How to Use DIN Terminal Connector

⚠ Caution

Connection

1. Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
2. After removing the holding screw, insert a flat blade screwdriver etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
3. Loosen the screw (slotted screws) in the terminal block. Insert the lead core wires to the terminals according to the connection method, and secure the wires by re-tightening the terminal screw.
4. Secure the cord by fastening the ground nut.

⚠ Caution

When making connections, please note that using other than the supported size ($\phi 3.5$ to $\phi 7$) heavy-duty cord will not satisfy IP65 (enclosure) standards. Also, be sure to tighten the ground nut and holding screw within their specified torque ranges.

Changing the entry direction

After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).

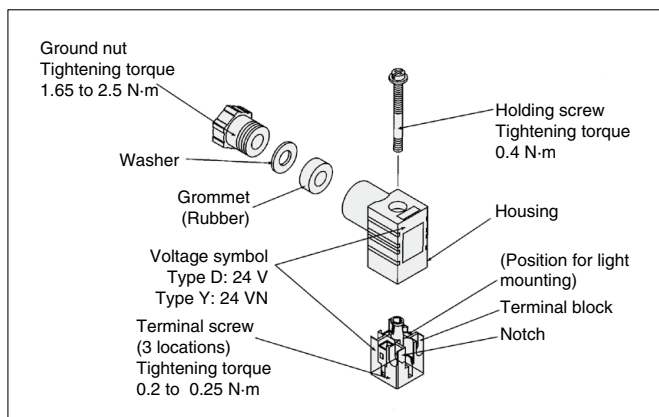
* When equipped with a light, be careful not to damage the light with the cord's lead wires.

Precautions

Plug in and pull out the connector vertically without tilting to one side.

Compatible cable

Cord O.D.: $\phi 3.5$ to $\phi 7$
(Reference) 0.5 mm², 2-core or 3-core, equivalent to JIS C 3306



Type “Y”

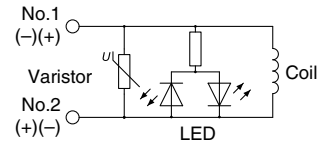
DIN connector type Y is a DIN connector that conforms to the DIN pitch 8-mm standard.

- D type DIN connector with 9.4 mm pitch between terminals is not interchangeable.
- To distinguish from the D type DIN connector, “N” is listed at the end of voltage symbol.
- Dimensions are completely the same as D type DIN connector.

Light/Surge Voltage Suppressor

DIN Terminal

With light (DZ)
(YZ)



There is no polarity.

Note) Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge voltage.

Limit Switch Cable

OMRON or Rockwell Automation M12 connector limit switch cable is available.

M12 Connector Cable (4 Pins) Made by OMRON

| Part number | Cable length [mm] |
|-------------|-------------------|
| ZS-37-L | 300 |
| ZS-37-M | 500 |
| ZS-37-N | 1000 |
| ZS-37-P | 2000 |
| ZS-37-C | 5000 |

M12 Connector Cable (6 Pins) Made by Rockwell Automation

| Part number | Cable length [mm] |
|-------------|-------------------|
| VP500-231-1 | 2000 |

Installation

Use the external pilot type when using VP500/700-X536 or X538 with AV series. Install the AV series to the primary side.

VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

Specific Product Precautions

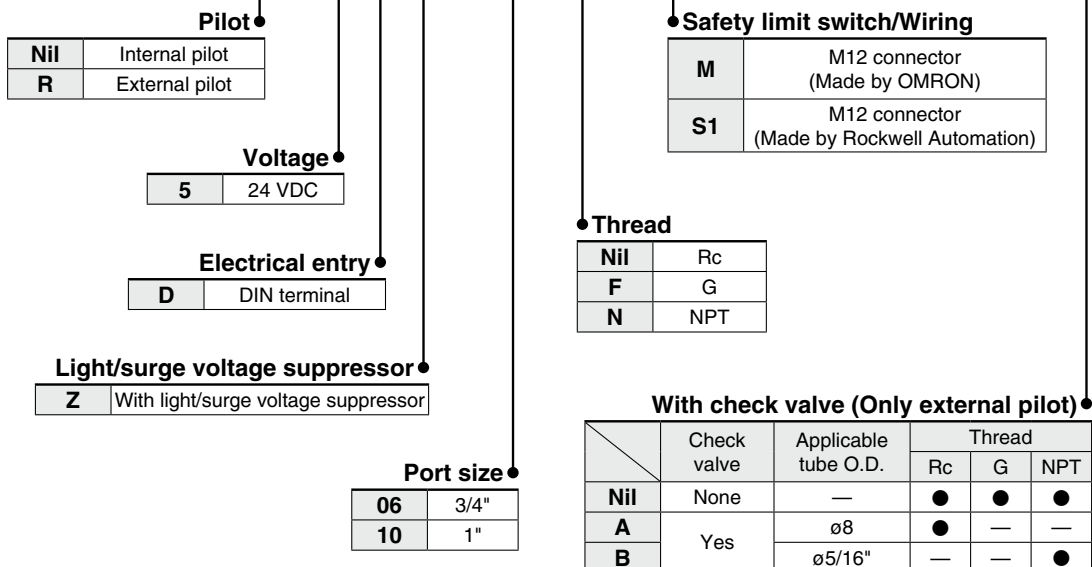
3 Port Solenoid Valve/Residual Pressure Release Valve with Detection of Main Valve Position VG342-X87



How to Order

Dual residual pressure release valve

VG342 **R** - **5** **DZ** - **06** - **M** - **X87**



* For internal pilot, the symbol is nil.
* Refer to "Piping for External Pilot Type" on page 20 for selection of the check valve.

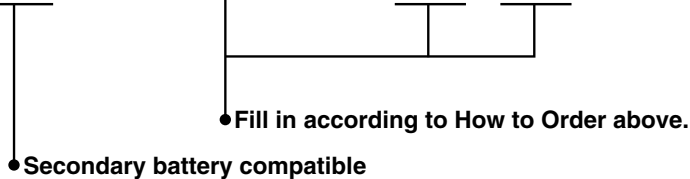
Made to Order

1 Series Compatible with Secondary Batteries

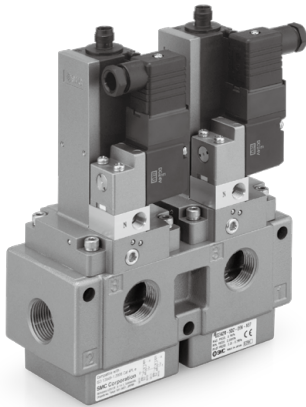
For details about 25A-, refer to the WEB catalog "Series Compatible with Secondary Batteries/Series 25A-."

How to Order

25A-VG342 - **5DZ** - - **M** - **X87**



Note) Electrical entry can be selected only for D type. Check valve type is available only when the thread type is Rc.



Valve Specifications

| | | |
|-----------------------------------|---------------------------------|---|
| Fluid | Air | |
| Type of actuation | N.C. (Spring return) | |
| Operation | Internal pilot | External pilot |
| Operating pressure range | 0.25 to 0.7 MPa | 0.25 to 0.7 MPa |
| External pilot pressure | — | 0.25 to 0.7 MPa (Same as operating pressure) |
| Maximum operating frequency | 30 times/minute | |
| Minimum operating frequency | 1 time/week | |
| Operating and ambient temperature | -10 to 50°C (No freezing) | |
| Ambient humidity | 95%RH or less (No condensation) | |
| Manual override | None | |
| Pilot exhaust | Individual exhaust | |
| Lubrication | Not required | |
| Mounting orientation | Unrestricted | |
| Impact/Vibration resistance | 150/50 m/s ² | |
| Enclosure | IP40 | |
| Operating environment | Indoors | |
| Weight | 2.8 kg | 2.9 kg |
| B10d (MTTFd calculation) | 900000 times | |

Internal Pilot Type

⚠ Caution

Valve may not operate properly when air supply to P port is not adequate and the supply pressure to the valve is lower than 0.25 MPa, the minimum operating pressure. Be careful with insufficient supply pressure.

Piping for External Pilot Type

⚠ Caution

The product may not operate when the external pilot pressure is insufficient due to simultaneous operation or restricted air piping. In this case, use the check valve (AKH series) with the external pilot port, change the piping size or adjust the set pressure to provide a constant pressure of 0.25 MPa or more.

Flow Rate Characteristics

| Series | Flow rate characteristics | | | | | |
|------------------|---------------------------------|------|-----|---------------------------------|------|-----|
| | 1→2 (P→A) | | | 2→3 (A→R) | | |
| | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv |
| VG342-X87 | 26.6 | 0.04 | 5.5 | 28.6 | 0.03 | 5.6 |

Solenoid Specifications

| | |
|-------------------------------|-------------------------------|
| Electrical entry | DIN terminal |
| Rated voltage | 24 VDC |
| Allowable voltage fluctuation | -15% to +10% of rated voltage |
| Power consumption | 2.2 W |
| Suppressor | Diode |
| Indicator | LED |

Safety Limit Switch Specifications

| | | |
|-----------------------------------|-------------------------------|-------------------------------|
| Manufacturer | OMRON | Rockwell Automation |
| Electrical wiring | M12 connector | |
| Contact resistance | 25 mΩ or less | 50 mΩ or less |
| Min. applicable load | 5 VDC, 1 mA (Load resistance) | 5 VDC, 5 mA (Load resistance) |
| Max. voltage | 24 VDC | |
| Max. load current | 50 mA | |
| Max. load inductance | 0.5 H | |
| Insulation voltage | 300 V | 600 V |
| Protection against electric shock | Class II (EN60947-5-1: 2004) | |

VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

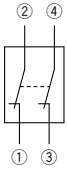
Specific Product Precautions

VG342-X87

Symbols

Safety limit switch
Made by
OMRON

Symbol

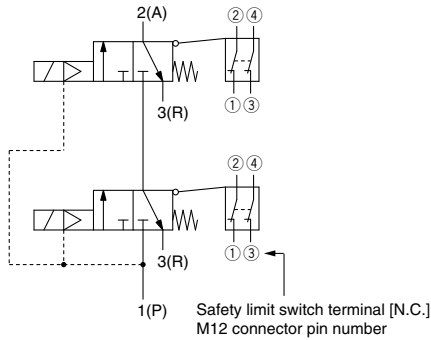


Pin Numbers (Built-in switch 2N.C.)

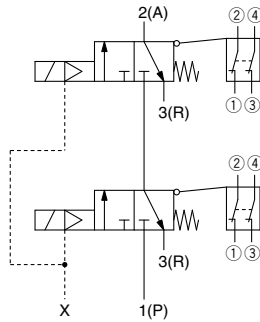
| M12 connector pin number | Wiring specification |
|--------------------------|----------------------|
| ① | |
| ② | |
| ③ | |
| ④ | |

VG342(R)-X87

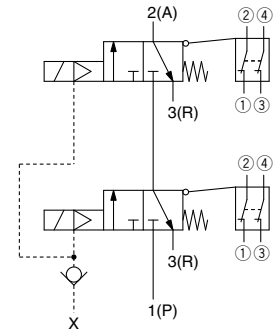
Internal pilot



External pilot

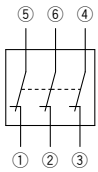


External pilot/With check valve



Safety limit switch
Made by
Rockwell Automation

Symbol

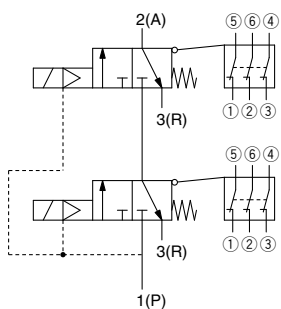


Pin Numbers (Built-in switch 3N.C.)

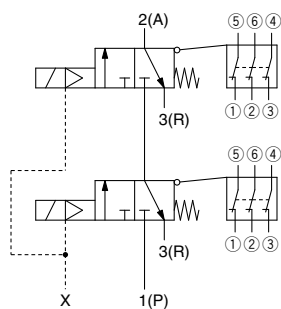
| M12 connector pin number | Wiring specification |
|--------------------------|----------------------|
| ① | |
| ⑤ | |
| ② | |
| ⑥ | |
| ③ | |
| ④ | |

VG342(R)-X87

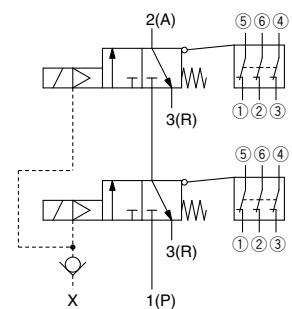
Internal pilot



External pilot



External pilot/With check valve

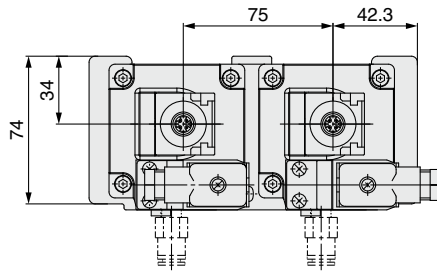


Dimensions

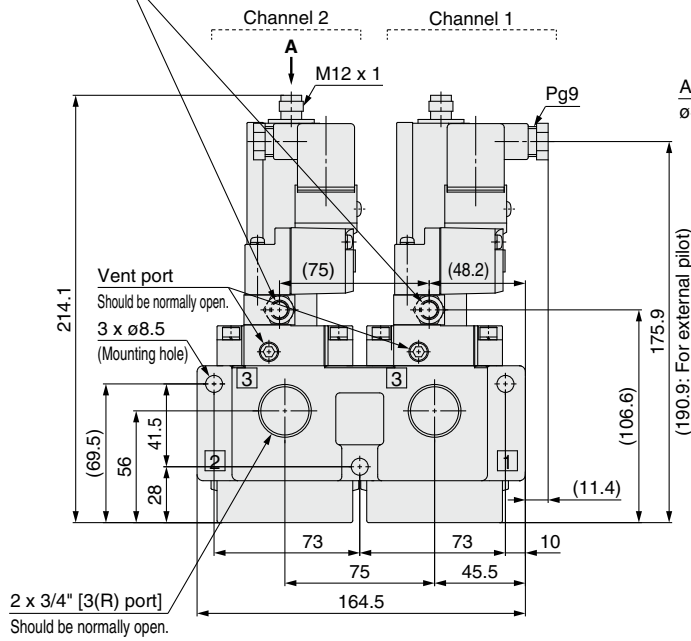
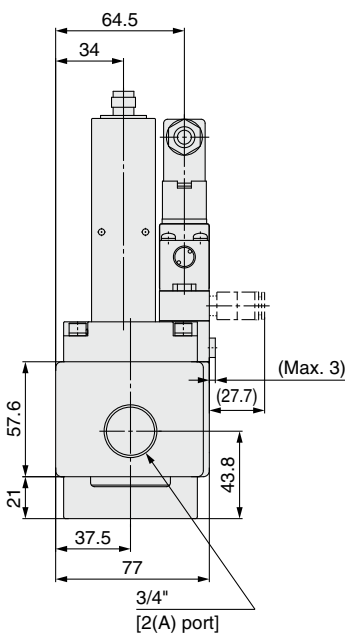
Dual Residual Pressure Release Valve (-X87)

VG342(R)-5DZ-06□-M□-X87

Safety limit switch
Made by
OMRON

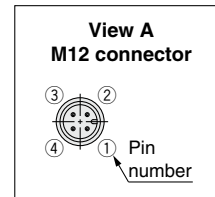
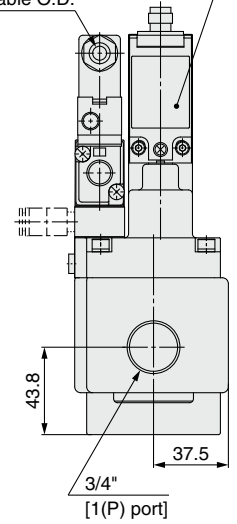


Port size: 1/8" (Without check valve)
Applicable tube O.D.: ø8, ø5/16" (With check valve)
(External pilot port)



Safety limit switch (made by OMRON)
Part number: D4N-9B31

Applicable cable O.D.
ø4.5 to ø7



VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

Specific Product Precautions

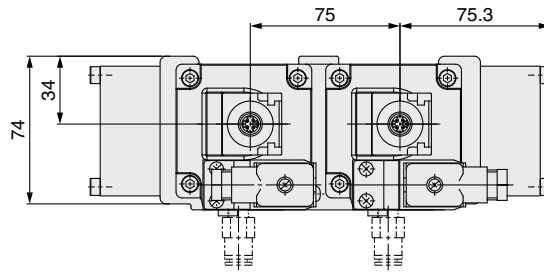
VG342-X87

Dimensions

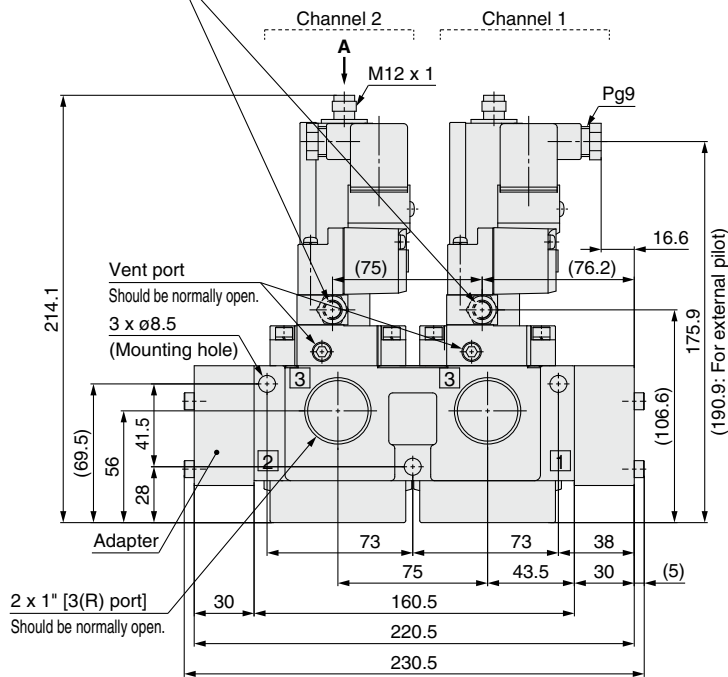
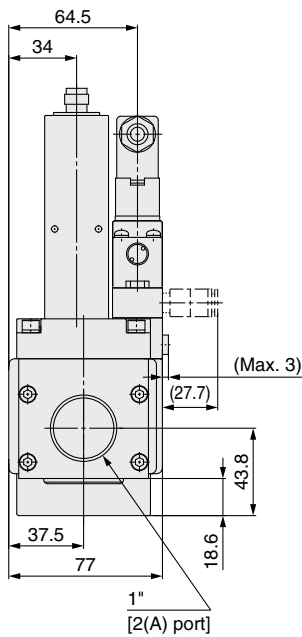
Dual Residual Pressure Release Valve (-X87)

VG342(R)-5DZ-10□-M□-X87

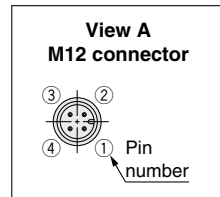
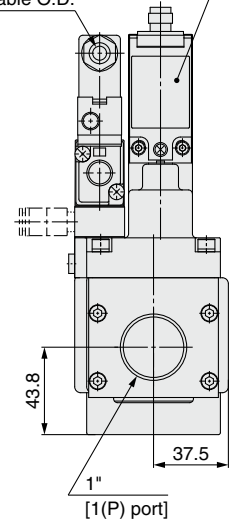
Safety limit switch
Made by
OMRON



Port size: 1/8" (Without check valve)
Applicable tube O.D.: $\varnothing 8, \varnothing 5/16"$ (With check valve)
(External pilot port)



Safety limit switch (made by OMRON)
Part number: D4N-9B31
Applicable cable O.D.
 $\varnothing 4.5$ to $\varnothing 7$

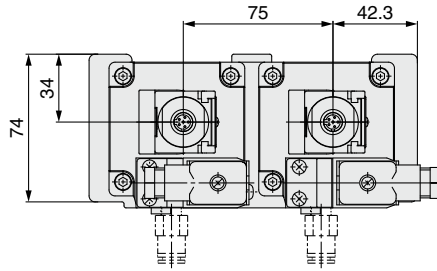


Dimensions

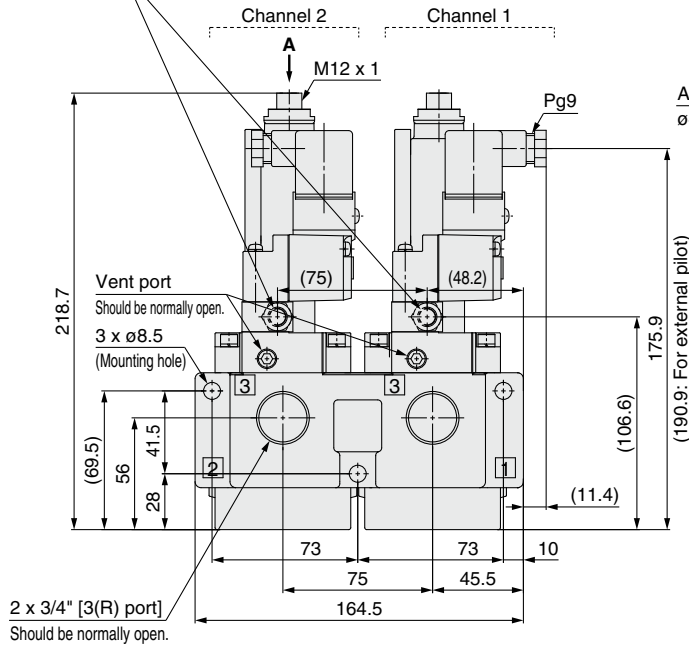
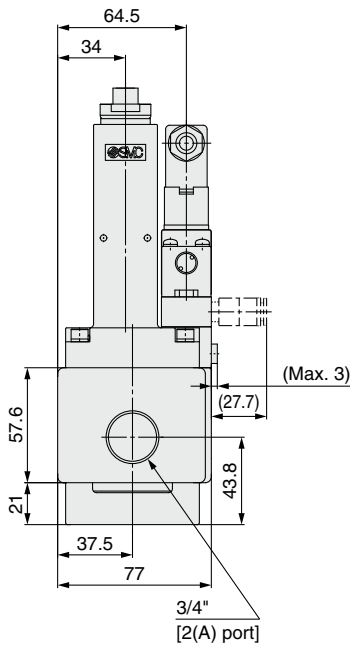
Dual Residual Pressure Release Valve (-X87)

VG342(R)-5DZ-06□-S1□-X87

Safety limit switch
Made by
Rockwell Automation

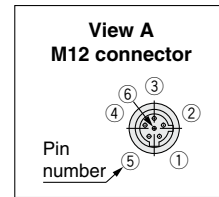
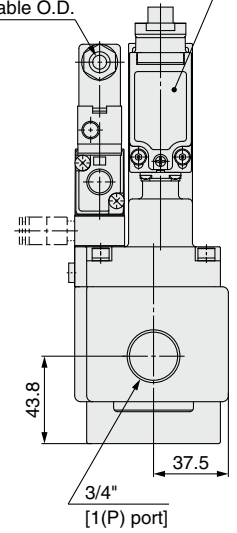


Port size: 1/8" (Without check valve)
Applicable tube O.D.: ø8, ø5/16" (With check valve)
(External pilot port)



Safety limit switch
(made by Rockwell Automation)
Part number: 440P-CDPB03R6

Applicable cable O.D.
ø4.5 to ø7



VP500/700

Symbols

X536

X538

X555

Optional Accessories

Specific Product Precautions

VG342

Symbols

X87

Specific Product Precautions