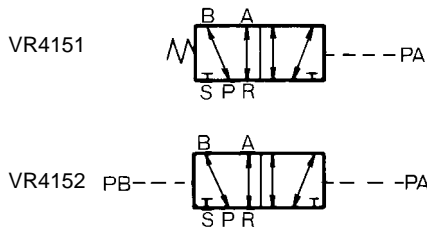


# Transmitters: Relay Valve VR4151/4152

Appropriate output sequences are affected according to the signal received from the mechanical valve.



JIS Symbol



## Specifications

Fluid	Air	
Operating pressure	0 to 1.0 MPa	
Pilot pressure	0.15 to 1.0 MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Effective area	1/8: 7 mm <sup>2</sup>	
Port size	1/8	
Weight	Side ported	350 g
	Bottom ported	300 g
Lubrication	Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)	

## Model

Function	Sub-plate	Model	Indicator	
Single pilot	W/o sub-plate	VR4151-00-0		
		VR4151-00-1	○	
	W/ sub-plate	Side piping	VR4151-01A-1	○
		Bottom piping	VR4151-01B-0	
			VR4151-01B-1	○
Double pilot	W/o sub-plate	VR4152-00-0		
		VR4152-00-1	○	
	W/ sub-plate	Side piping	VR4152-01A-1	○
		Bottom piping	VR4152-01B-0	
			VR4152-01B-1	○

S□A

V□A

S□A

V□A

VM

**VR**

VH

VHS

## ⚠ Precautions

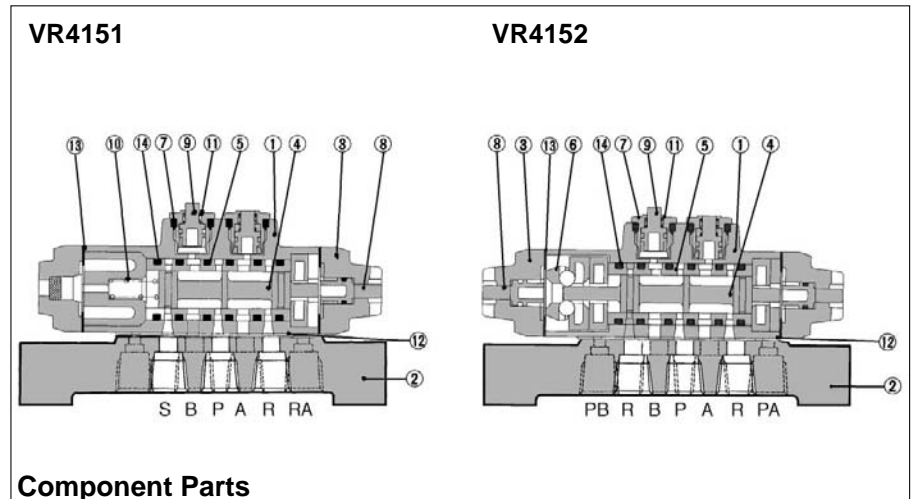
Be sure to read before handling. Refer to pages 5-11-2 to 6 for Safety Instruction and Solenoid Valve Precautions.

### Environment

#### ⚠ Caution

Operate the valve in an area in which the vibration does not exceed 5 G. Vibrations could cause the valve to malfunction.

## Construction



## Component Parts

No.	Description	Material	No.	Description	Material
①	Valve	ADC	⑧	Manual button	PE
②	Sub-plate	ZDC	⑨	Piston	PE
③	Pilot cover	ADC	⑩	Spring	Steel
④	Spool	Stainless steel	⑪	Spring	Stainless steel
⑤	Sleeve	Stainless steel	⑫	Gasket	NBR
⑥	Detent assembly		⑬	Gasket	NBR
⑦	Piston cover	Brass	⑭	O-ring	NBR

# Series VR4151/4152

## How to Order

VR41 5 1 01 A 1

• Indicator light

0	No
1	Yes

• Sub-plate

A	Side piping
B	Bottom piping

• Port size

00	W/o sub-plate
01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

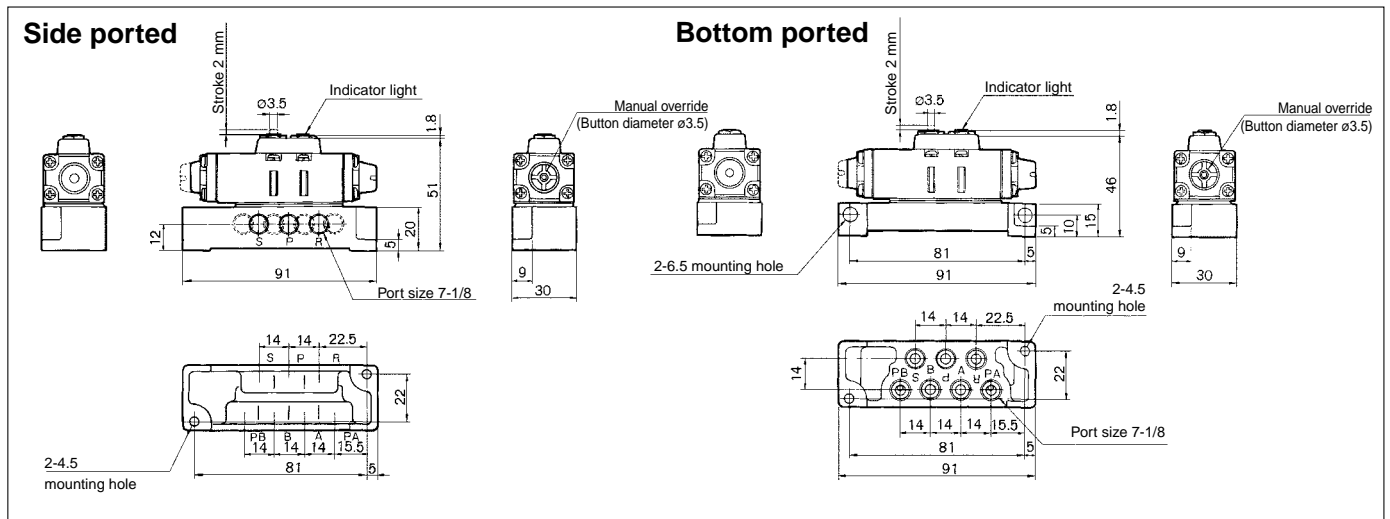
• Number of pilot ports

1	Single pilot
2	Double pilot

• Number of ports

5	5 port
---	--------

## Dimensions

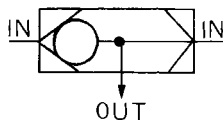


# Transmitters: Shuttle Valve VR1210/1220

3 ported check valve with one output and 2 pneumatic signal input ports. Output always supplied by high pressure inlet.



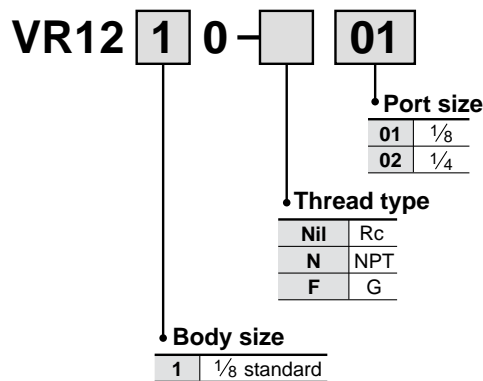
JIS Symbol



## Model/Specifications

Model	VR1210-01	VR1220-02
Max. operating pressure	1.0 MPa	
Min. operating pressure	0.05 MPa	
Min. pressure differential	0.05 MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Effective area	7 mm <sup>2</sup>	15 mm <sup>2</sup>
Port size	1/8	1/4
Weight	24 g	45 g

## How to Order



S□A

V□A

S□A

V□A

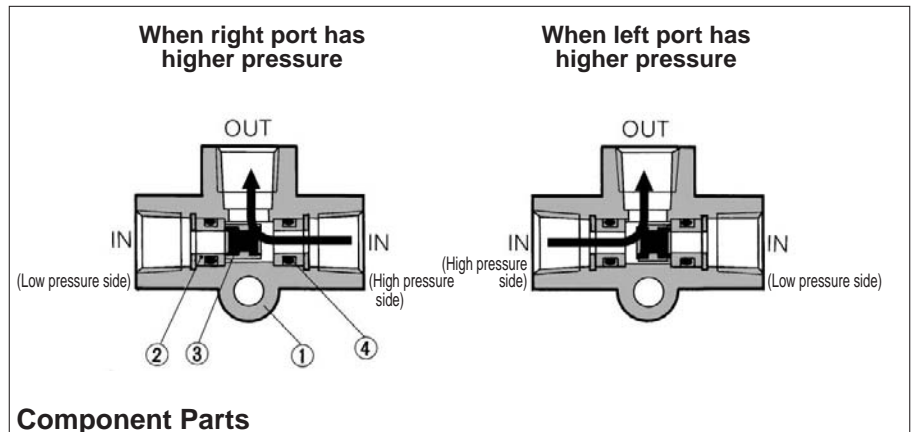
VM

**VR**

VH

VHS

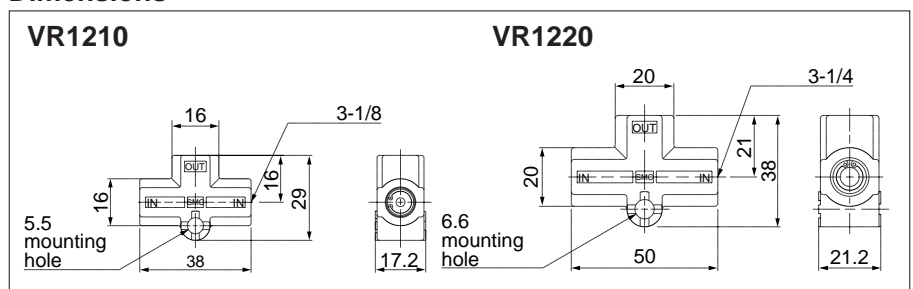
## Construction



## Component Parts

No.	Description	Material	Note	No.	Description	Material	Note
①	Body	ADC	Metallic plated	③	Valve	Brass, NBR	
②	Valve seat	Brass		④	O-ring	NBR	

## Dimensions



# Series VR1210/1220

## How to Order

VR2110-01-□

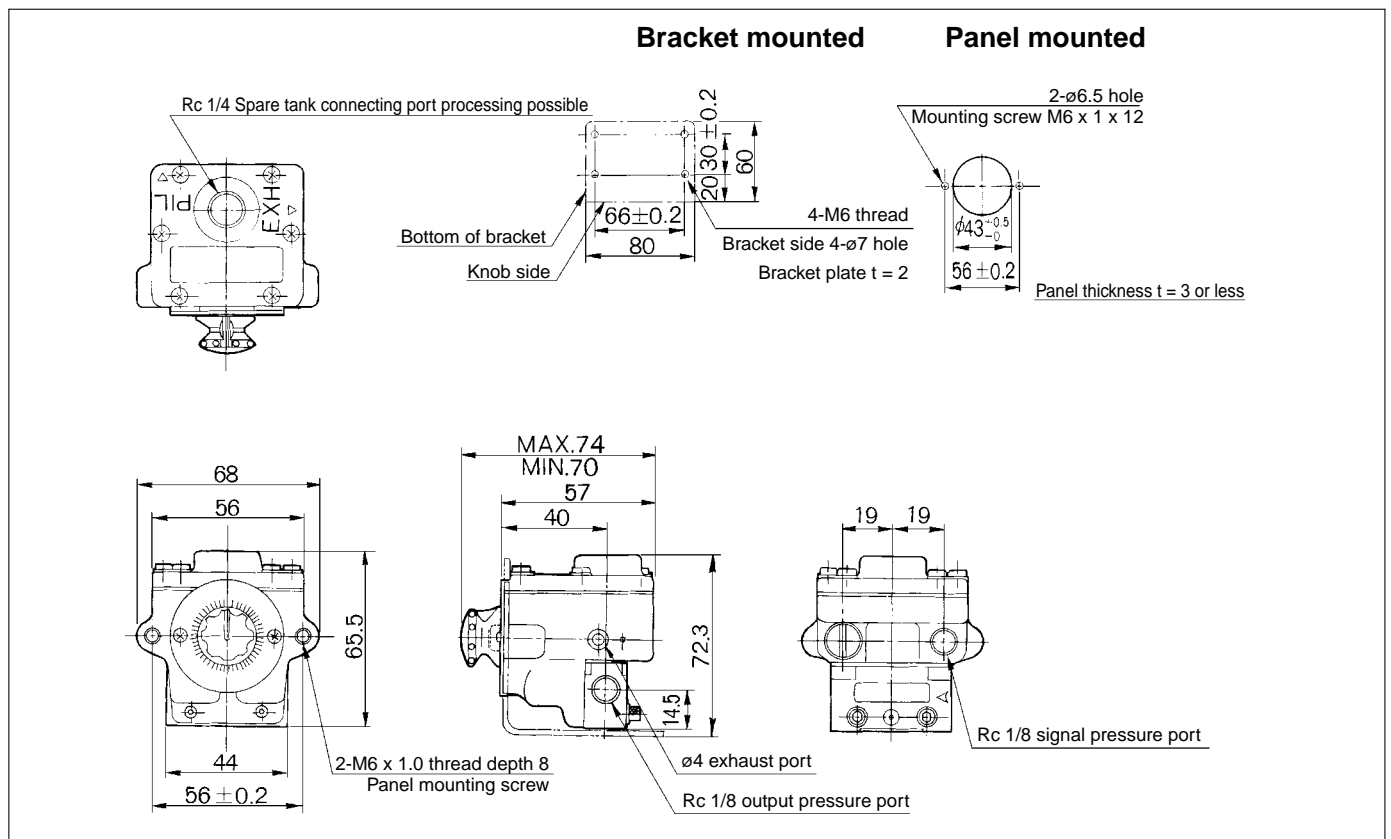
### Option

X3	Secondary tank connection board Rc1/4
X102	N.O. N.C. common type (With VM430)

### Port size

01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

## Dimensions



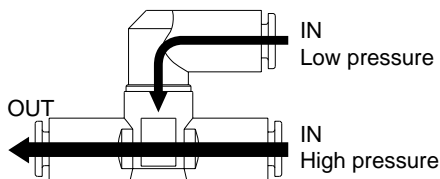
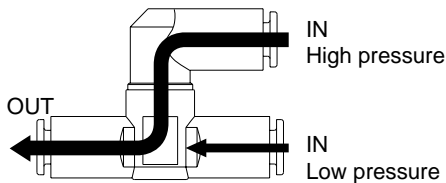
# Transmitters: Shuttle Valve with One-touch Fittings VR1210F/1220F



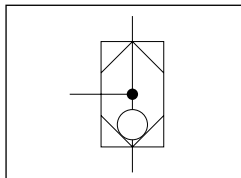
## Relay valves for controlling pneumatic signal lines



The air of higher pressure side constantly flows to the OUT side.



### JIS Symbol



## Model

Model	Applicable tubing diameter									
	Metric size					Inch size				
	3.2	4	6	8	10	1/8"	5/32"	1/4"	5/16"	3/8"
VR1210F	●	●	●	●		●	●	●	●	
VR1220F			●	●	●			●	●	●

## Specifications

Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.05 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

Note 1) Use caution about the maximum operating pressure when soft nylon and polyurethane is used. (Refer to "Best Pneumatics Vol. 15".)

Note 2) Brass components are all electroless nickel plated as standard. (Copper-free)

## Flow Rate and Effective Area

Model		VR1210F				VR1220F		
Applicable tubing O.D.	Metric size	ø3.2	ø4	ø6	ø8	ø6	ø8	ø10
	Inch size	ø1/8"	ø5/32"	ø1/4"	ø5/16"	ø1/4"	ø5/16"	ø3/8"
IN → OUT	Flow rate (l/min (ANR))	150	210	420	480	440	680	1000
	Effective area (mm <sup>2</sup> )	2.3	3.2	6.4	7.3	6.7	10.4	15.2

Note) Flow rate is the value measured under a pressure of 0.5 MPa and a temperature of 20°C.

## How to Order

VR 12 **1** 0 F — **06**

Body size

1	1/8 standard
2	1/4 standard

Shuttle valve

With One-touch fittings

Applicable tubing diameter

Metric size		Inch size	
23	ø3.2*	01	ø1/8"
04	ø4	03	ø5/32"
06	ø6	07	ø1/4"
08	ø8	09	ø5/16"
10	ø10	11	ø3/8"

\* For ø3.2, use ø1/8" tubing.

S□A

V□A

S□A

V□A

VM

VR

VH

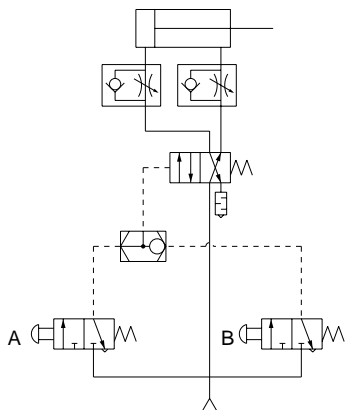
VHS

# Series VR1210F/1220F

## Example of Operating Circuit

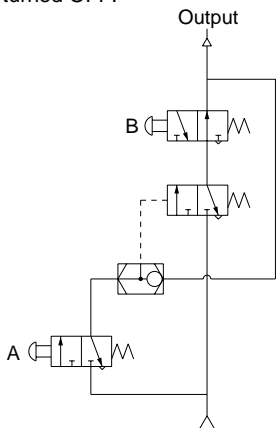
### OR circuit

- If either A or B is turned ON, cylinder is actuated.



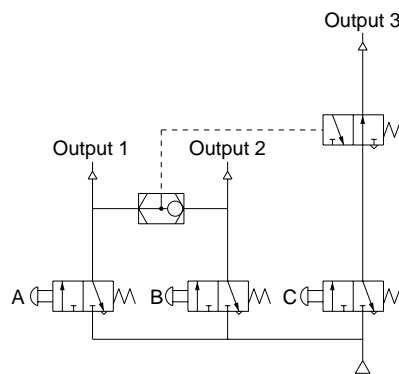
### Self-hold circuit

1. If A is turned ON, the output turns ON.
2. Even though A is turned OFF, the output remains in ON state.
3. If B is turned ON in 2. state, the output is turned OFF.

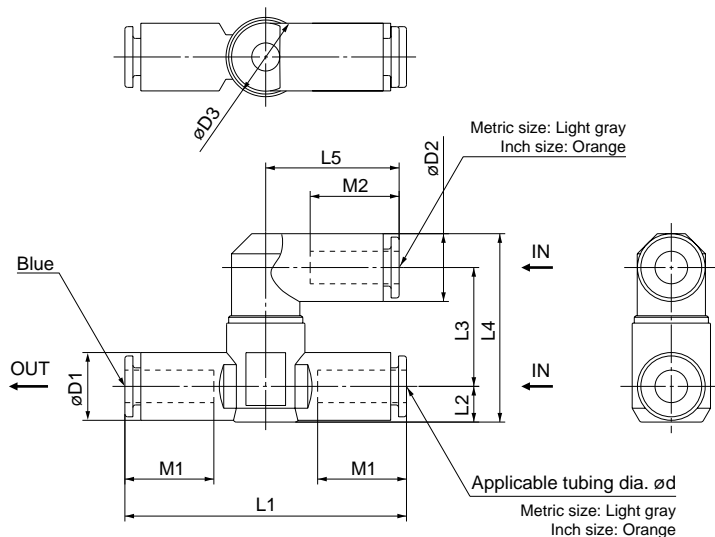


### Interlock circuit

- When either A or B is turned ON, even though C turns ON, the output 3 will not be turned ON.



## Dimensions



### Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1210F-23	3.2	11.4	8.4	14.8	52	6.2	19.4	29.8	17.5	12.7	12.9	21.4
VR1210F-04	4	12.8	10.4		56	6.8	20.3	32.2	21.9	15.7	15.8	25.2
VR1210F-06	6	12.8	12.8		53.2	22.5	35.6	25.2	16.8	16.8	23.0	
VR1210F-08	8	15.2	15.2		60.4		8.1	38.2	28.2	18.7	18.7	24.0
VR1220F-06	6	12.8	12.8	19.8	59	7.4	23.9	37.7	25.2	16.8	16.8	27.2
VR1220F-08	8	15.2	15.2		65	8.2		39.7	28.2	18.7	18.7	31.9
VR1220F-10	10	18.5	18.5		71.6	9.8	25.8	44.8	31	20.8	20.8	43.2

### Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1210F-01	1/8"	11.4	8.4	14.8	52	6.2	19.4	29.8	17.5	12.7	12.9	21.4
VR1210F-03	5/32"	12.8	10.4		56	6.8	20.3	32.2	21.9	15.7	15.8	25.2
VR1210F-07	1/4"	13.2	13.2		54.4	7.1	22.5	36.2	25.6	16.8	16.8	23.5
VR1210F-09	5/16"	15.2	15.2		60.4	8.1		38.2	28.2	18.7	18.7	24.0
VR1220F-07	1/4"	13.2	13.2	19.8	59	7.4	23.9	37.9	25.6	16.8	16.8	31.4
VR1220F-09	5/16"	15.2	15.2		65	8.2		39.7	28.2	18.7	18.7	31.9
VR1220F-11	3/8"	17.9	18.5		69.8	9.5	25.8	44.5	31	20.8	20.8	53.0

# Transmitters: AND Valve with One-touch Fittings VR1211F

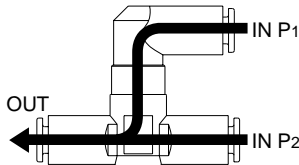


## Relay valves for controlling pneumatic signal lines

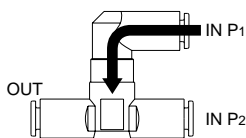
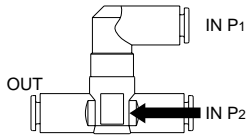


Only when air is supplied to both P1 and P2 does air flow to the OUT side.

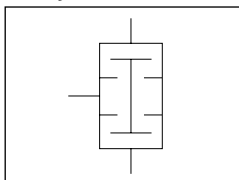
When air pressure differs, pressure in the lower amount flows to the OUT side.



If air is only supplied only to either P1 or P2 it, does not flow to the OUT side.



JIS Symbol



## Model

Model	Applicable tubing diameter					
	Metric size			Inch size		
	3.2	4	6	1/8"	5/32"	1/4"
VR1211F	●	●	●	●	●	●

## Specifications

Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.05 MPa
Ambient temperature and operating fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

Note 1) Use caution about the maximum operating pressure when soft nylon and polyurethane is used. (Refer to "Best Pneumatics Vol. 15".)

Note 2) Brass components are all electroless nickel plated as standard. (Copper-free)

## Flow Rate and Effective Area

Model		VR1211F			
Applicable tubing O.D.	Metric size	ø3.2	ø4	ø6	—
	Inch size	ø1/8"	ø5/32"	—	ø1/4"
IN → OUT	Flow rate (l/min(ANR))	100	120	150	170
	Effective area (mm <sup>2</sup> )	1.5	1.8	2.3	2.6

Note) Flow rate is the value measured under a pressure of 0.5 MPa and a temperature of 20°C.

## How to Order

**VR 12 1 1 F — 06**

- VR**: Body size
- 12**: Body size
- 1**: Body size
- 1**: Body size
- F**: AND valve
- 06**: Applicable tubing diameter

Body size	
1	1/8 standard

Applicable tubing diameter	
Metric size	Inch size
23	ø3.2 *
04	ø4
06	ø6
01	ø1/8"
03	ø5/32"
07	ø1/4"

\* For ø3.2, use ø1/8" tubing.

With One-touch fittings

S□A

V□A

S□A

V□A

VM

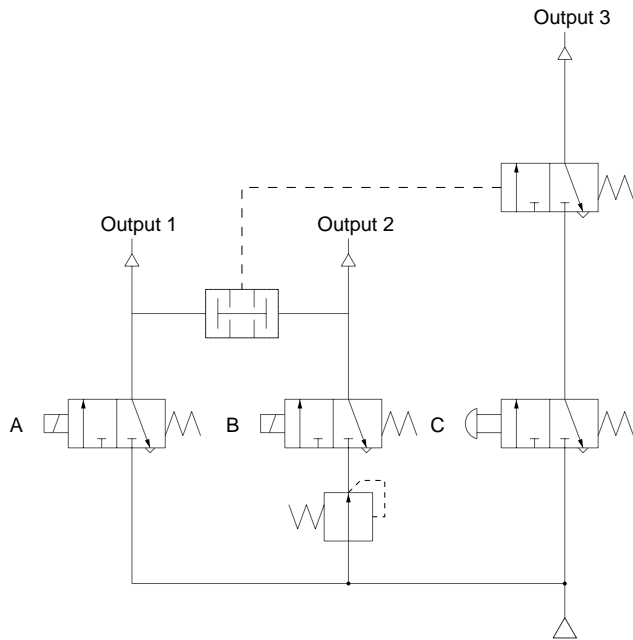
VR

VH

VHS

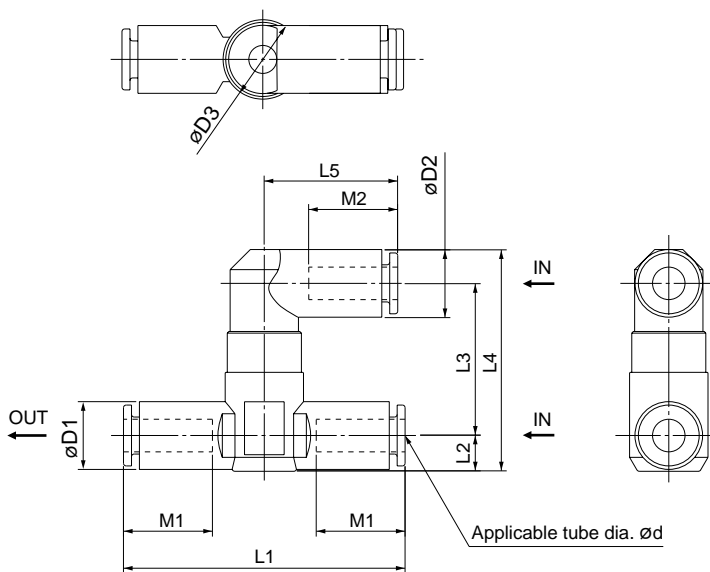
# Series VR1211F

## Example of Operating Circuit



- If both A and B are turned ON, which are in different pressure conditions, both output 1 and 2 will turn ON.
- Only when output 1 and 2 are in the ON state, and C turns ON, will output 3 turn ON.
- If either A or B is turned OFF, output 3 will not be turned ON, even if C is turned ON.

## Dimensions



### Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1211F-23	3.2	11.4	8.4	14.8	52	6.2	25.7	36.1	17.5	12.7	12.9	26.4
VR1211F-04	4	12.8	10.4		56	6.8	26.6	38.5	21.9	15.7	15.8	30.4
VR1211F-06	6	12.8	12.8		53.2		28.8	41.9	25.2	16.8	16.8	25.0

### Inch Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Weight (g)
VR1211F-01	1/8"	11.4	8.4	14.8	52	6.2	25.7	36.1	17.5	12.7	12.9	26.4
VR1211F-03	5/32"	12.8	10.4		56	7.1	26.6	38.5	21.9	15.7	15.8	30.4
VR1211F-07	1/4"	13.2	13.2		54.4		28.8	42.5	25.6	16.8	16.8	27.0



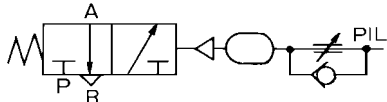
# Transmitters: Time Delay Valve VR2110



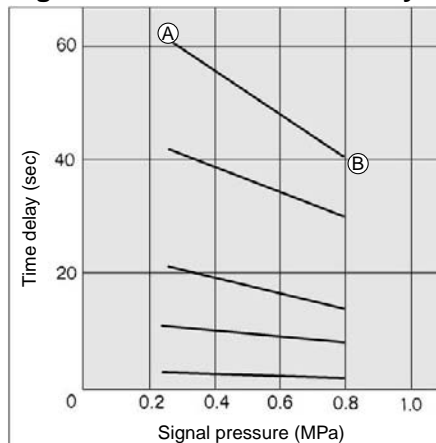
Combination of adjustable orifice and fixed flow allows transmission of a pneumatic signal after a fixed time period.



JIS Symbol

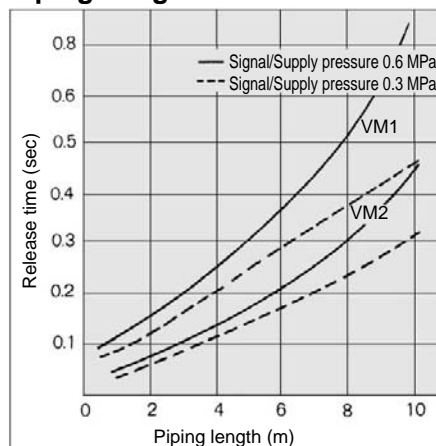


Signal Pressure vs. Time Delay



Example) Ⓐ is the point, which is set by the input signal pressure 0.25 MPa, with a delay time of 60 sec. With the same status, if the input signal pressure is increased to 0.8 MPa, the delay time varies to the Ⓑ point (≒ 40 sec).

Piping Length vs. Release Time



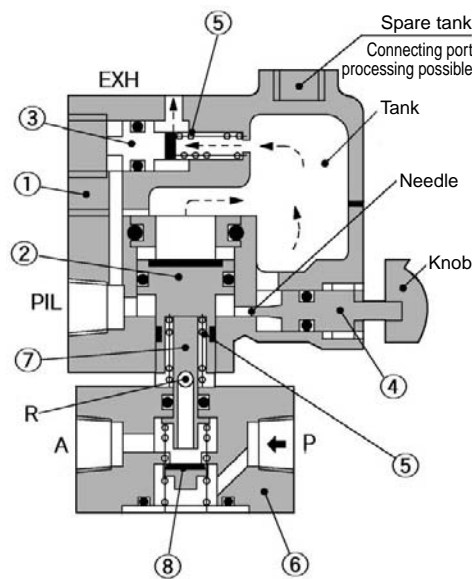
If the input signal (PIL) is turned OFF, the release time of the time delay valve changes depending upon the effective area of the valve and the length of piping. Please refer to the above graph for the standard values.

## Model/Specifications

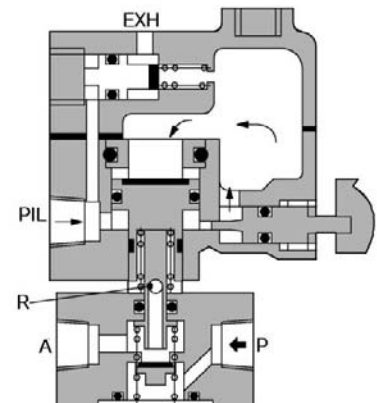
Model	VR2110-01
Supply pressure	0.1 to 1.0 MPa
Signal pressure	0.25 to 0.8 MPa
Time delay	0.5 to 60 s
Repeatability	±10% F.S.
Operating and fluid temperature	-5 to 60°C (No freezing)
Effective area	2.5 mm <sup>2</sup>
Port size	1/8
Weight	500 g

## Construction

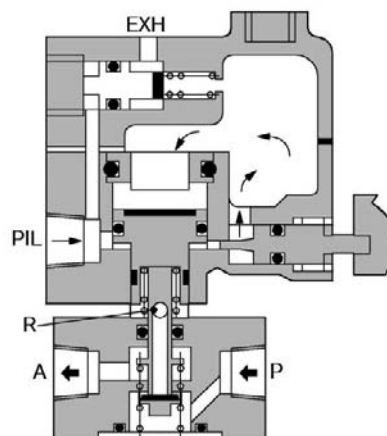
### Non-actuated



### Actuated before time set



### Actuated after time set



## Component Parts

No.	Description	Material	Note	No.	Description	Material	Note
①	Body	ADC	Metallic plated	⑤	Spring	Steel	
②	Piston	Brass, NBR	Rubber lined	⑥	Body	ZDC	Metallic plated
③	Piston	Brass, NBR	Rubber lined	⑦	Plunger	Stainless steel	
④	Needle	Brass		⑧	Valve	Brass, NBR	Rubber lined

S□A

V□A

S□A

V□A

VM

VR

VH

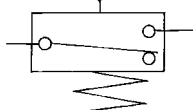
VHS

# Transmitters: Pneumatic-electric Relay VR3200/3201

**Pneumatic-electric relay converts pneumatic signal to electric relay.**



JIS Symbol



## ⚠ Precautions

Be sure to read before handling. Refer to pages 5-11-2 to 6 for Safety Instruction and Solenoid Valve Precautions.

### Piping

## ⚠ Warning

When connecting a pipe fitting to the IN port, place the wrench over the hexagon portion of the lid.

If the wrench is placed over the microswitch body, the neck of the microswitch could break.

## Model/Specifications

Model	VR3200-01	VR3201-01
Construction	Open type	Splashproof (IP44 equivalent)
Weight	130 g	260 g
Operating pressure	0.1 to 1.0 MPa	
Ambient and fluid temperature	-5 to 60°C (No freezing)	
Contacts	1 ab	
Port size	1/8	

## Microswitch Rating

Voltage	Non-inductive load (A)				Inductive load (A)			
	Resistance load		Light load		Inductive load		Electric motor load	
	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.	N.C.	N.O.
125 VAC	15	15	4	2	10	10	4	2
250 VAC	15	15	3	1.5	10	10	3	1.5
8 VDC	15	15	3	1.5	15	15	5	2.5
14 VDC	15	15	3	1.5	10	10	5	2.5
30 VDC	6	6	3	1.5	5	5	5	2.5
125 VDC	0.5	0.5	0.3	0.3	0.05	0.05	0.05	0.05
250 VDC	0.25	0.25	0.2	0.2	0.03	0.03	0.03	0.03

## How to Order

VR320 0 01

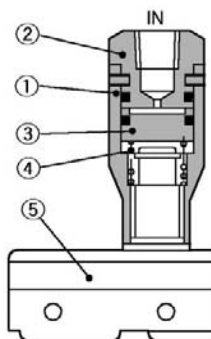
### • Port size

01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

### • Construction

0	Open type
1	Splashproof (IP44 equivalent)

## Construction

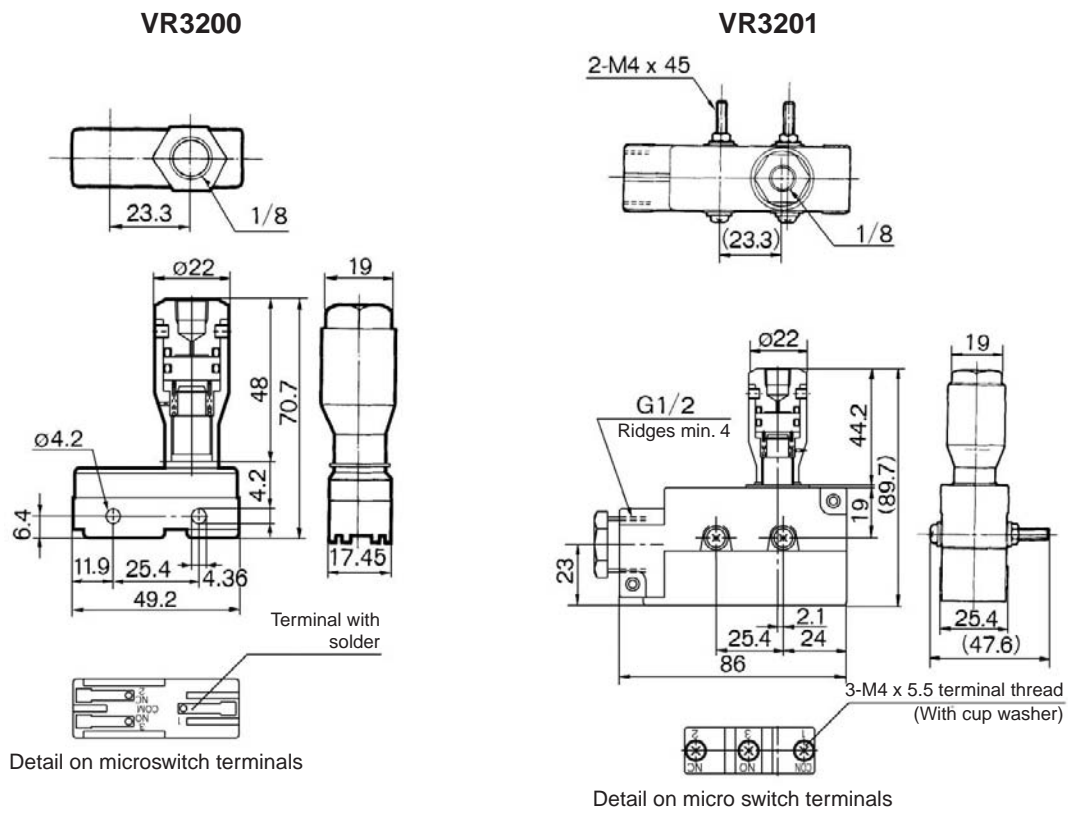


### Component Parts

No.	Description	Material	Note	No.	Description	Material	Note
①	Body	Brass		④	Spring	Stainless steel	
②	Cap	Brass		⑤	Microswitch		Contacts 1 ab
③	Piston	POM					

# Series VR3200/3201

## Dimensions



- S□A
- V□A
- S□A
- V□A
- VM
- VR
- VH
- VHS

# Transmitters: Pneumatic Indicator VR3100

Indicates the presence of pneumatic pressure. It is equivalent to the pilot lamp of an electrical system.



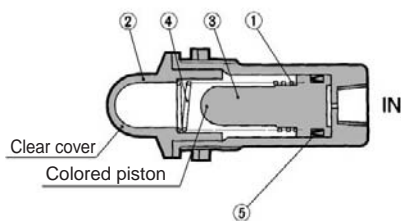
JIS Symbol



## Model/Specifications

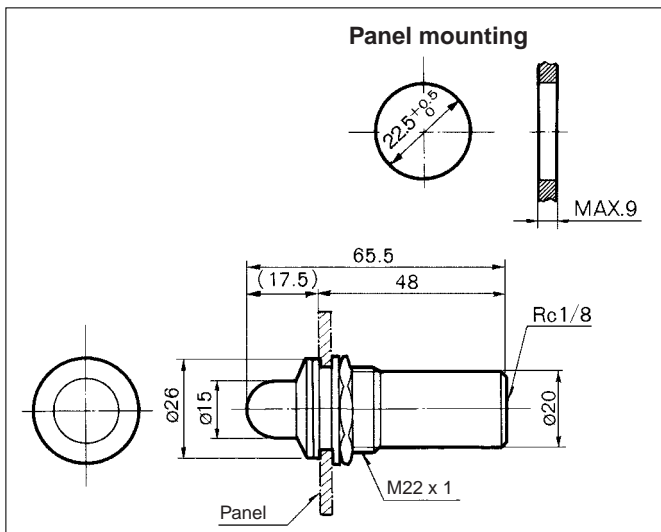
Model	VR3100-01R	VR3100-01G	VR3100-01O
Operating pressure	0.1 to 0.8 MPa		
Ambient and fluid temp.	-5 to 60°C (No freezing)		
Frequency	100 c.p.m. or less		
Color of indicator	Red	Green	Orange
Port size	Rc 1/8		
Weight	40 g		

## Construction



No.	Description	Material	Note
①	Body	Aluminum alloy	
②	Indicator window	Acrylic	
③	Piston	POM	
④	Spring	Stainless steel	
⑤	Packing	NBR	

## Dimensions



# Transmitters: Miniature Pneumatic Indicator VR3110

This is an ultra-compact air indicator light to monitor the presence of air pressure. It is equivalent to the pilot lamp of an electrical system.



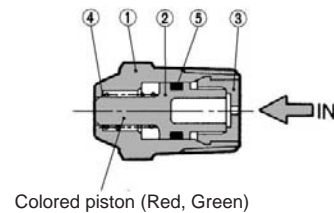
JIS Symbol



## Model/Specifications

Model	VR3110-01R	VR3110-01G
Color of indicator	Red	Green
Operation	Piston style	
Operating pressure	0.15 to 1.0 MPa	
Ambient and fluid temp.	-5 to 60°C (No freezing)	
Frequency	300 c.p.m. or less	
Port size	R 1/8	
Weight	6 g	

## Construction



No.	Description	Material	Note
①	Body	Brass	
②	Piston A	POM	
③	Plug	PE	
④	Spring	Stainless steel	
⑤	O-ring	NBR	

## Dimensions

