

Relay valve
P. 1900

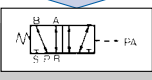

Dimensions
Side piping: 30 x 53 x 91
Bottom piping: 30 x 48 x 91

VR4151



VR4152



Effective area (mm ²)	Number of ports	Function
7	5	 Metal Spool 

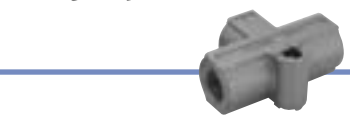
Shuttle valve
P. 1902

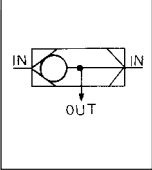
Dimensions
VR1210: 17.2 x 38 x 29
VR1220: 21.2 x 50 x 38

VR1210



VR1220

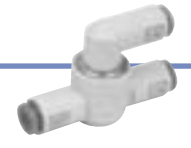


7	3	 IN OUT
15	3	

Shuttle valve
P. 1903

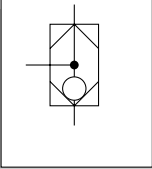
Dimensions 71.6 x 44.8

VR1210F



VR1220F

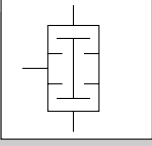


7.3	3	
15.2	3	

AND valve
P. 1905

VR1211F



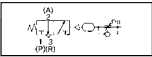
2.6	3	
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Time delay valve
P. 1907

Dimensions 70 x 68 x 66

VR2110



2.5	3	
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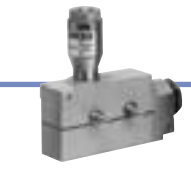
Pneumatic-electric relay
P. 1909

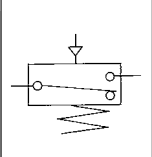
Dimensions
VR3200: 17 x 49 x 71
VR3201: 25 x 86 x 89

VR3200



VR3201



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Pneumatic indicator
P. 1911

Dimensions ø26 x 66

VR3100

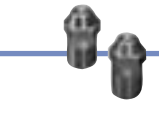


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Miniature pneumatic indicator
P.1911

Dimensions ø12 x 17

VR3110



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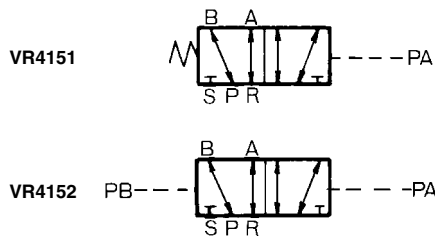
Transmitters: Relay Valve

Series VR4151/4152

Appropriate output sequences are affected according to the signal received from the mechanical valve. It is equivalent to the auxiliary relay of an electrical system.



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 : 7mm ²	
Port size	1/8	
Mass	Side ported	350 g
	Bottom ported	300 g
Lubrication	Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)	

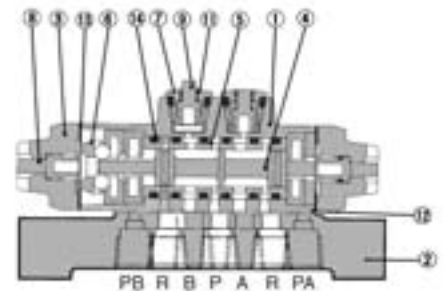
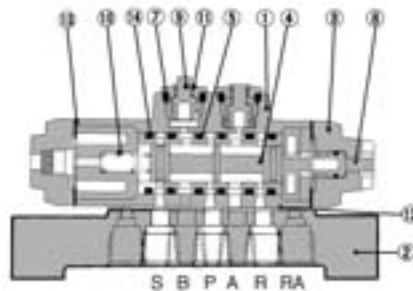
Model

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

Construction

VR4151

VR4152



⚠ Precautions

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port 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.

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

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**

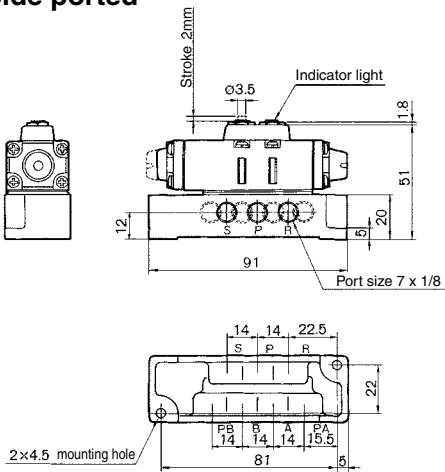
1	Single pilot
2	Double pilot

• **Number of ports**

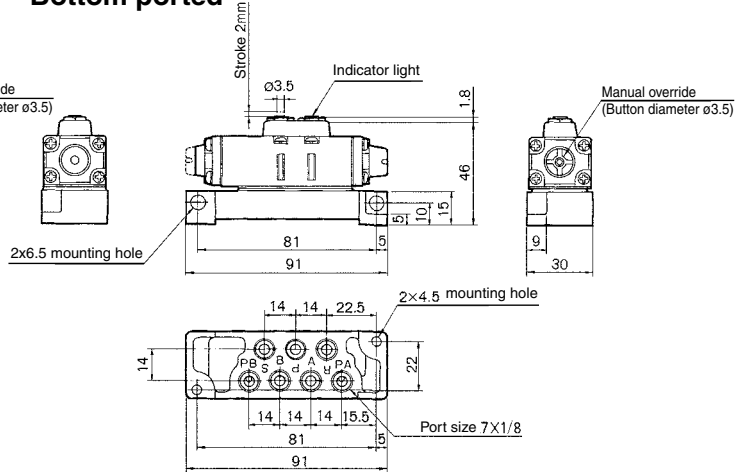
5	5 port
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Dimensions

Side ported



Bottom ported



VM

VMG

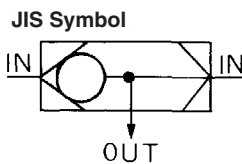
VR

VH

Transmitters: Shuttle Valve

Series VR1210/1220

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



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	7mm ²	15mm ²
Port size	1/8	1/4
Mass	24 g	45 g

How to Order

VR12 **1** 0 - **01**

• Port size Applicable model

01	1/8	VR 1210
02	1/4	VR 1220

• Thread type

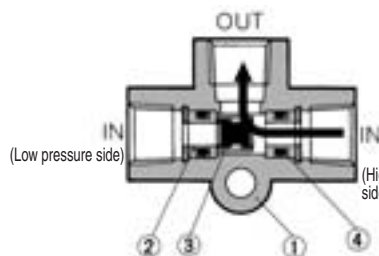
Nil	Rc
N	NPT
F	G

• Body size

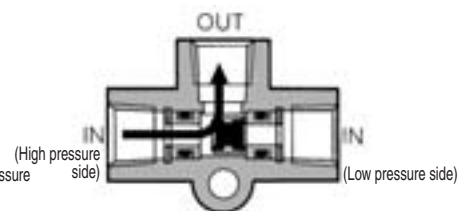
1	1/8 standard
2	1/4 standard

Construction

When right port has higher pressure



When left port has higher pressure

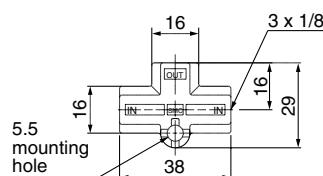


Component Parts

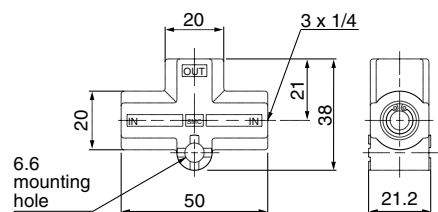
No.	Description	Material	Note	No.	Description	Material	Note
1	Body	ADC	Platinum silver	3	Valve	Brass, NBR	
2	Valve seat	Brass		4	O-ring	NBR	

Dimensions

VR1210



VR1220

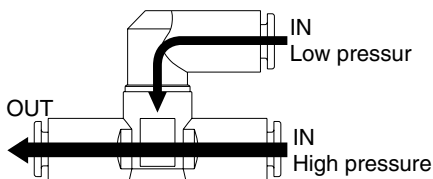
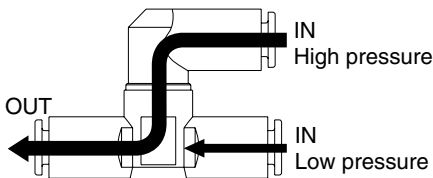


Transmitters: Shuttle Valve with One-touch Fittings Series *VR1210F/1220F*

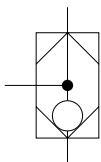
Relay valves for controlling pneumatic signal lines



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



JIS Symbol



Model

Model	Applicable tubing O.D.									
	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	1.0 MPa
Min. operating pressure	0.05 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material ⁽¹⁾	Nylon, Soft nylon, Polyurethane

Note 1) Use caution about the maximum operating pressure when soft nylon and polyurethane is used. (Refer to Best Pneumatics No. 6.)

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

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.

VM□

VMG

VR□

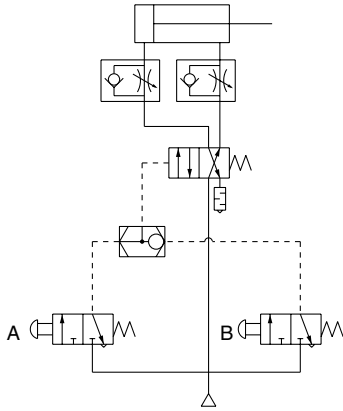
VH□

Series VR1210F/1220F

Example of Operating Circuit

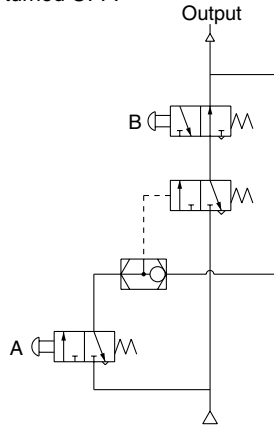
OR circuit

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



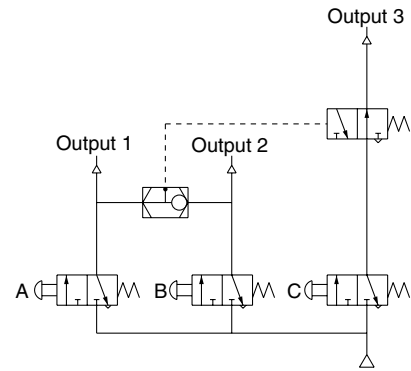
Self-hold circuit

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.

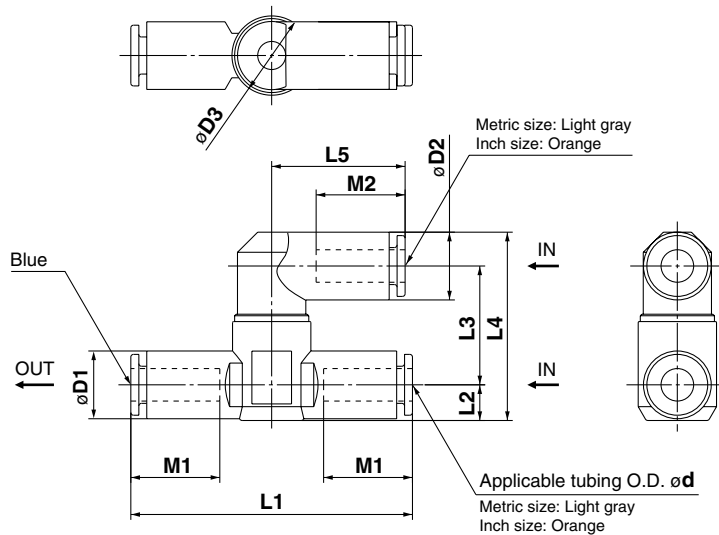


Interlock circuit

- When either A or B is turned ON, even though C turns ON, the output 3 will not be turned ON.
- Only when both A and B are in OFF state, if C turns ON, the output 3 is turned ON.



Dimensions



Metric Size

Model	d	D1	D2	D3	L1	L2	L3	L4	L5	M1	M2	Mass (g)
VR1210F-23	3.2	11.4	8.4		52	6.2	19.4	29.8	17.5	12.7	12.9	21.4
VR1210F-04	4	11	10.4	14.8	53	6	20.3	31.5	21.9	16.5	15.8	15.6
VR1210F-06	6	12.8	12.8		53.2	6.8	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		59	7.4	23.9	37.7	25.2	16.8	16.8	27.2
VR1220F-08	8	15.2	15.2	19.8	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	Mass (g)
VR1210F-01	1/8"	11.4	8.4		52	6.2	19.4	29.8	17.5	12.7	12.9	21.4
VR1210F-03	5/32"	11	10.4	14.8	53	6	20.3	31.5	21.9	16.5	15.8	15.6
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		59	7.4	23.9	37.9	25.6	16.8	16.8	31.4
VR1220F-09	5/16"	15.2	15.2	19.8	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

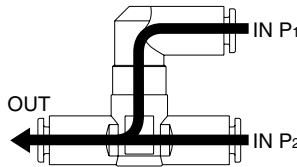
Transmitters: AND Valve with One-touch Fittings Series *VR1211F*

Relay valves for controlling pneumatic signal lines

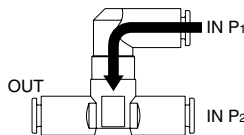
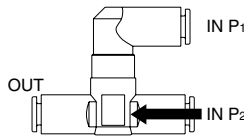


Only when air is supplied to both P₁ and P₂ does air flow to the OUT side.

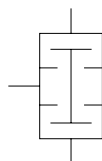
When air pressure differs, pressure in the lower amount flows to the OUT side.



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



JIS Symbol



Model

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

Specifications

Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa
Min. operating pressure	0.05 MPa
Ambient temperature and operating fluid temperature	-5 to 60°C (No freezing)
Applicable tubing material ⁽¹⁾	Nylon, Soft nylon, Polyurethane

Note 1) Use caution about the maximum operating pressure when soft nylon and polyurethane is used. (Refer to Best Pneumatics No. 6.)

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

Flow Rate and Effective Area

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

Body size
1 1/8 standard

AND valve

With One-touch fittings

Applicable tubing O.D.
Metric size Inch size

23	ø3.2 *	01	ø1/8"
04	ø4	03	ø5/32"
06	ø6	07	ø1/4"

* For ø3.2, use ø1/8" tubing.

VM□

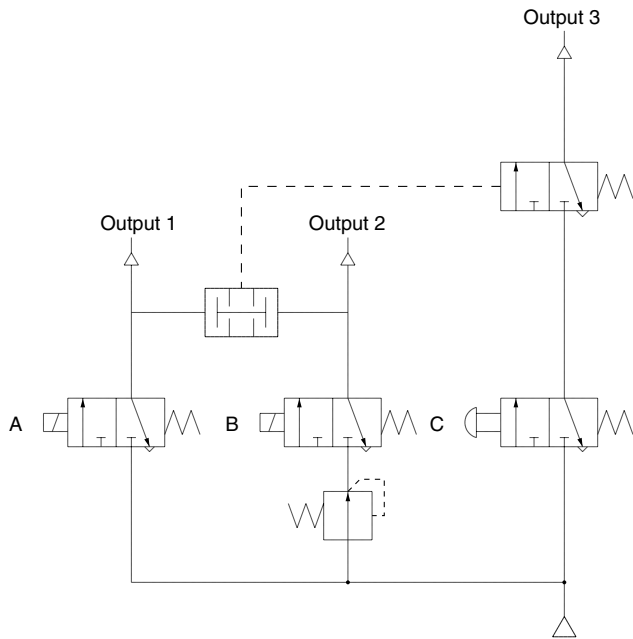
VMG

VR□

VH□

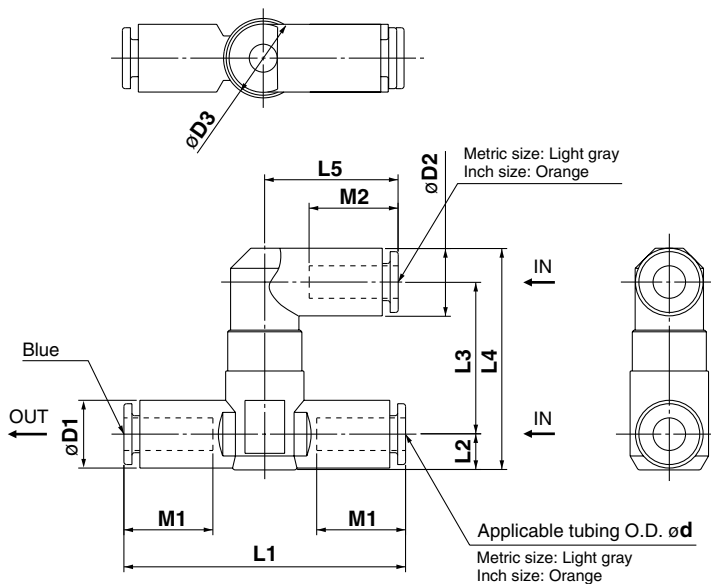
Series VR1211F

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	Mass (g)
VR1211F-23	3.2	11.4	8.4		52	6.2	25.7	36.1	17.5	12.7	12.9	26.4
VR1211F-04	4	11	10.4	14.8	53	6.8	26.6	37.8	21.9	16.5	15.8	20.8
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	Mass (g)
VR1211F-01	1/8"	11.4	8.4		52	6.2	25.7	36.1	17.5	12.7	12.9	26.4
VR1211F-03	5/32"	11	10.4	14.8	53	6.8	26.6	37.8	21.9	16.5	15.8	20.8
VR1211F-07	1/4"	13.2	13.2		54.4	7.1	28.8	42.5	25.6	16.8	16.8	27.0

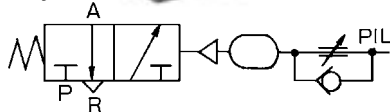
Transmitters: Time Delay Valve

Series VR2110

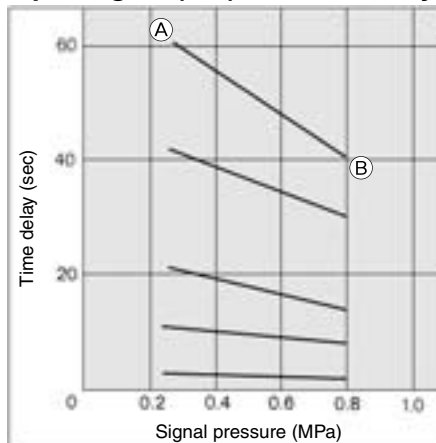
Combination of adjustable orifice and fixed flow allows transmission of a pneumatic signal after a fixed time period.



JIS Symbol

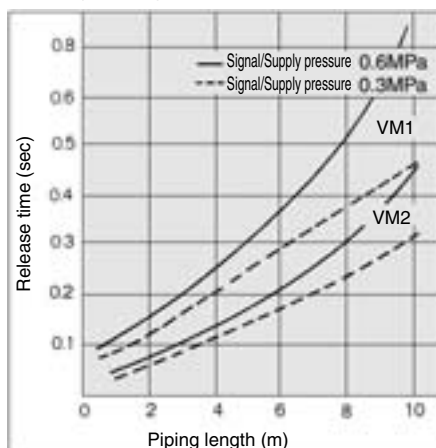


Input Signal (PIL) vs. Time Delay



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



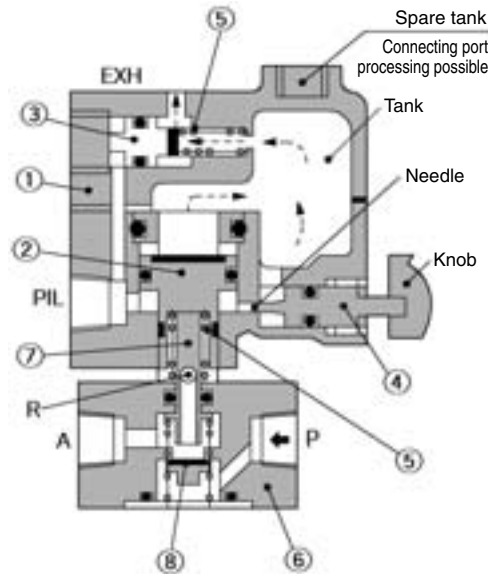
If the input signal (PIL) is turned OFF, the release time of the time delay valve changes depending upon the effective area of the valve and the length of piping. Please refer to the above graph for the standard values.

Model/Specifications

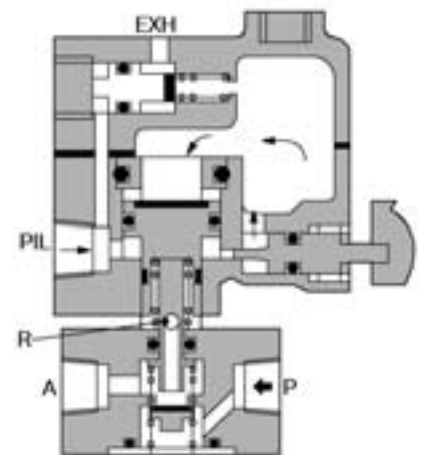
Model	VR2110-01
Supply pressure	0 to 1.0 MPa
Signal pressure	0.25 to 0.8 MPa
Time delay	0.5 to 60 s
Repeatability	±10% F.S.
Operating and fluid temperature	-5 to 60°C (No freezing)
Effective area	2.5 mm ²
Port size	1/8
Mass	500 g

Construction

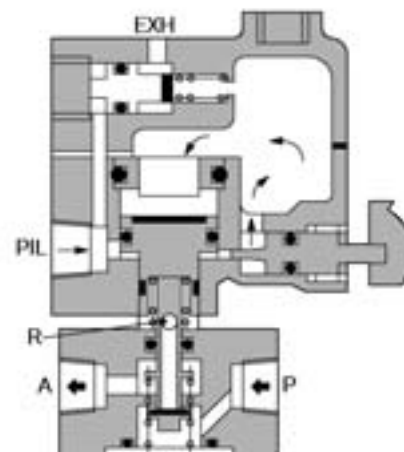
Non-actuated



Actuated before time set



Actuated after time set



Component Parts

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

VM□

VMG

VR□

VH□

Series VR2110

How to Order

VR2110 - 01 -

Option

X3	Secondary tank connection board Rc 1/4
X102	N.O. N.C. common type (With VM430)

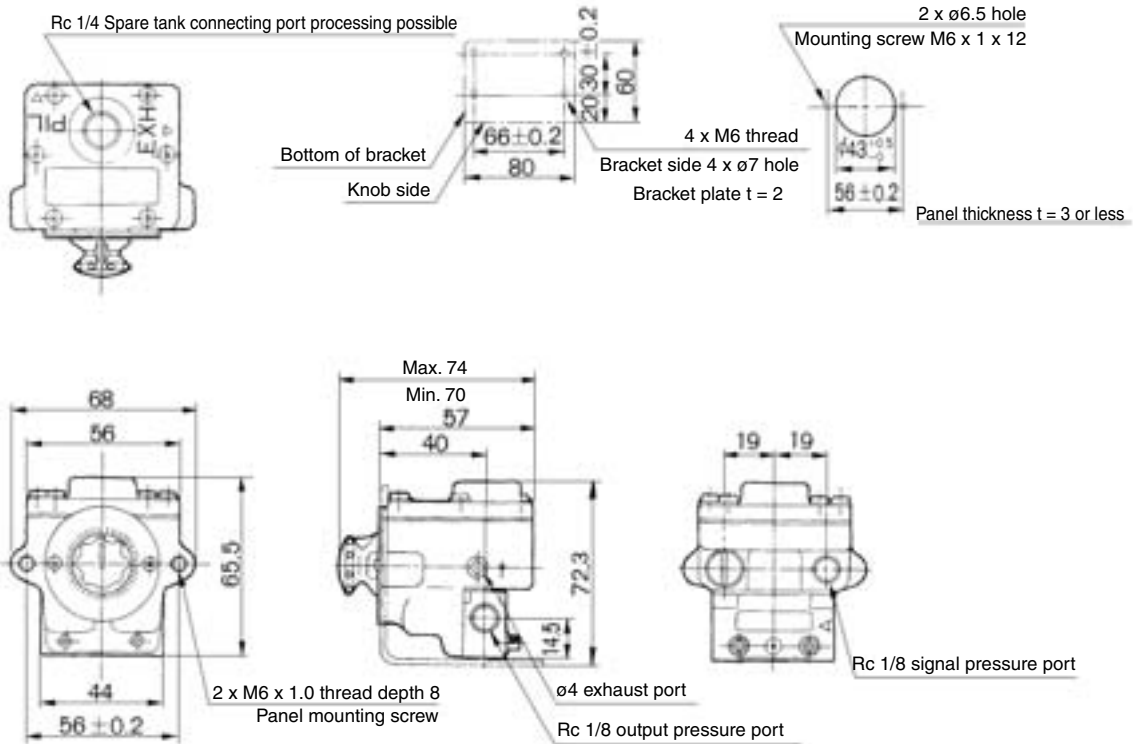
Port size

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

Dimensions

Bracket mounted

Panel mounted

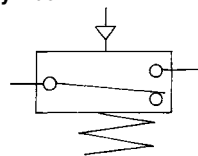


Transmitters: Pneumatic-electric Relay Series *VR3200/3201*

Pneumatic-electric relay converts pneumatic signal to electric relay.



JIS Symbol



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	1ab	
Port size	1/8	
Standard	CE-compliant (Low voltage directive) ^{Note)}	

Note) Voltage is up to 30 VDC. Voltage other than that will be inapplicable.

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)

⚠ Precautions

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

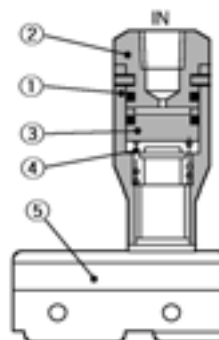
Piping

⚠ 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.

Construction



VM□

VMG

VR□

VH□

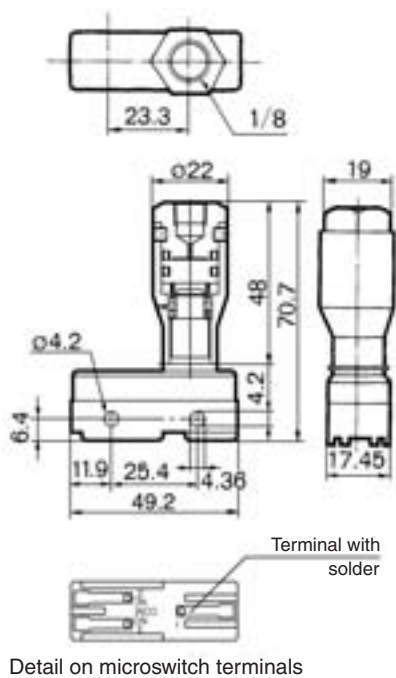
Component Parts

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					

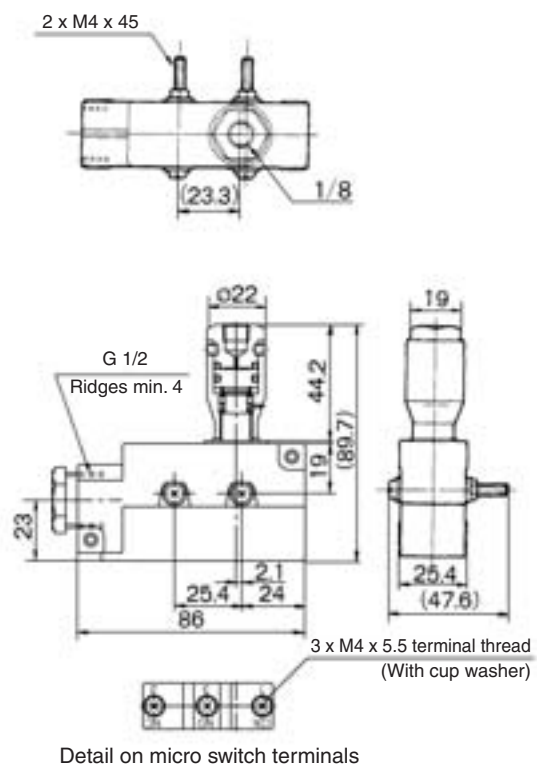
Series VR3200/3201

Dimensions

VR3200



VR3201



Transmitters: Pneumatic Indicator Series VR3100

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



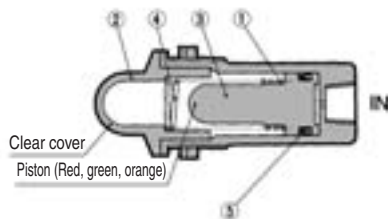
JIS symbol



Model/Specifications

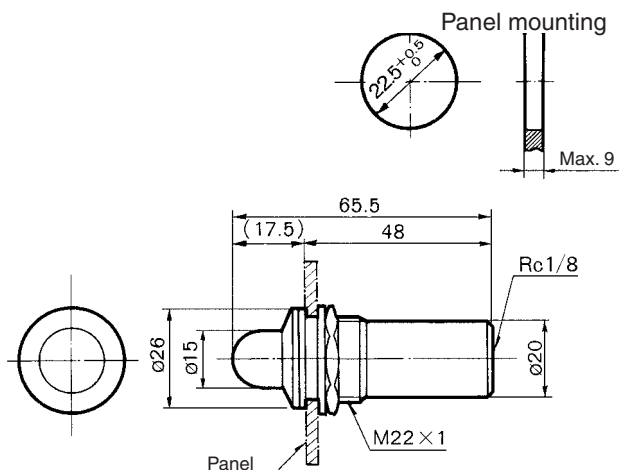
Model	VR3100-01R	VR3100-01G	VR3100-01O
Operating pressure	0.1 to 0.8 MPa		
Ambient and fluid temp.	-5 to 60°C (No freezing)		
Frequency	100 c.p.m. or less		
Color of indicator	Red	Green	Orange
Port size	Rc 1/8		
Mass	40g		

Construction



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

Dimensions



Transmitters: Miniature Pneumatic Indicator Series 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.



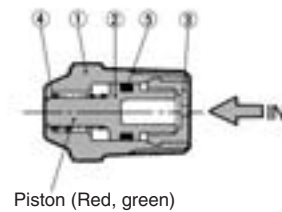
JIS symbol



Model/Specifications

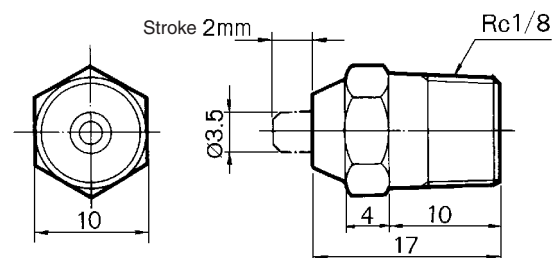
Model	VR3110-01R	VR3110-01G
Color of indicator	Red	Green
Operation	Piston style	
Operating pressure	0.15 to 1.0 MPa	
Ambient and fluid temp.	-5 to 60°C (No freezing)	
Frequency	300 c.p.m. or less	
Port size	R 1/8	
Mass	6g	

Construction



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

Dimensions



VM□

VMG

VR□

VH□