

Transmitters: Time Delay Valve

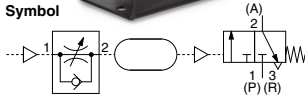
VR2110 Series



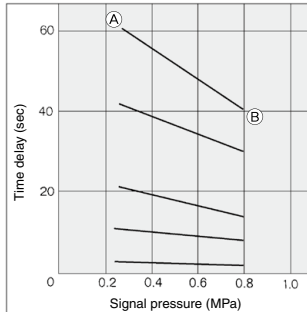
Combination of adjustable orifice and fixed flow allows transmission of a pneumatic signal after a fixed time period.



Symbol

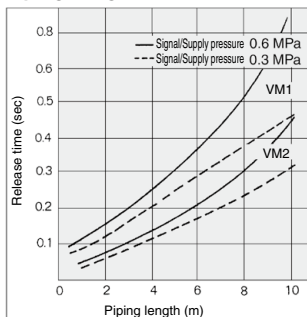


Input Signal (PIL) vs. Time Delay



Example (A) 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 (B) 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

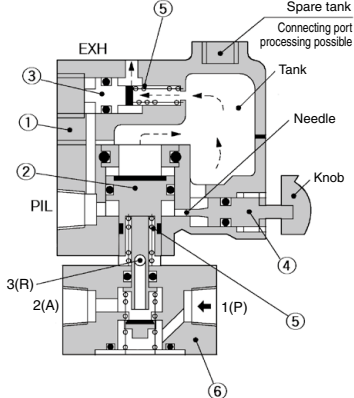
Model		VR2110-01
Fluid		Air
Supply pressure		0 to 1.0 MPa
Signal pressure		0.25 to 0.8 MPa
Time delay		0.5 to 60 s
Repeatability*		±10% F.S. (Representative valve)
Operating and fluid temperature		-5 to 60°C (No freezing)
Flow rate characteristics	C[dm ³ /(s·bar)]	0.6 [1(P)→2(A)], 0.5 [2(A)→3(R)]
	b	0.2 [1(P)→2(A)], 0.15 [2(A)→3(R)]
Port size		1/8
Weight		480 g

* The dispersion is shown excluding the first actuation when actuated 4 times continuously.

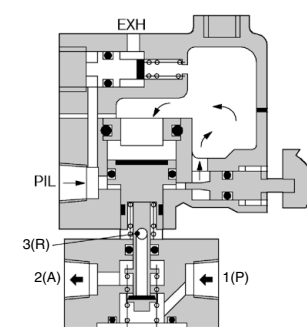
** The accuracy may differ from the values above due to the actual conditions, such as pressure fluctuations, temperature changes, operation intervals, changes over time, etc., so be sure to check the actual machine.

Construction

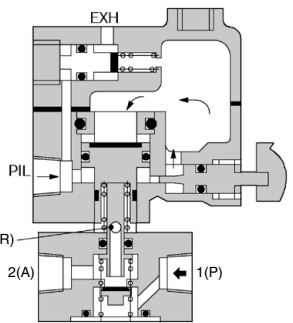
Non-actuated



Actuated after time set



Actuated before time set



Component Parts

No.	Description	Material	Note	No.	Description	Material	Note
1	Valve body	ADC	Platinum silver	5	Return spring	Steel	
2	Differential piston	Brass, NBR		6	Mechanical valve	Body: ZDC	VM130-C01-00A (Body color: White)
3	Exhaust piston	Brass, NBR					
4	Needle	Brass					



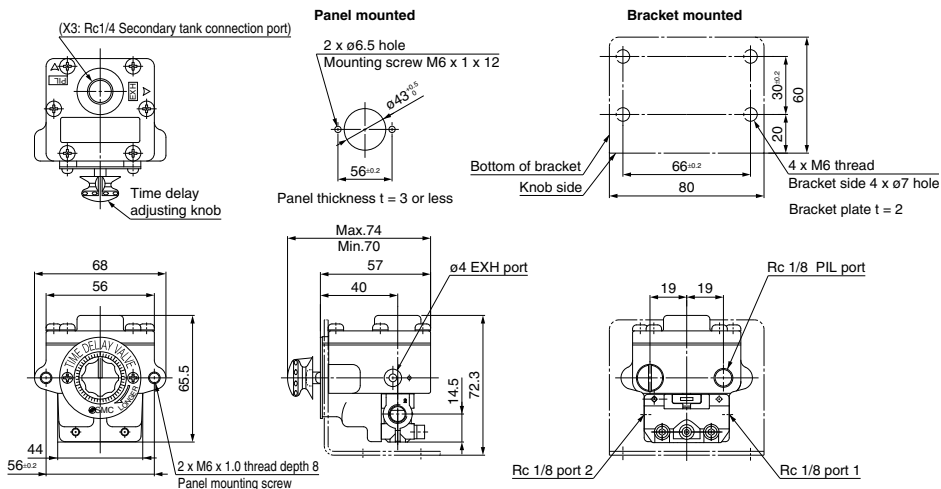
How to Order

VR2110 - **01** -

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

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

Dimensions



⚠ Precautions

For safety instructions, be sure to read back page 50 or the operation manual before using the product.

Pneumatic Pressure

⚠ Caution

- Use regulated air using a regulator for input signal air. When the input signal air fluctuates, there will be larger differences in the delayed time, making it impossible to obtain the intended functions. Make sure to regulate the air using a regulator to avoid any influence of pressure fluctuation due to air consumption of other equipment.

Operation

⚠ Warning

- The time delay adjusting knob should be operated by hand only. Do not over tighten the knob. If operating the knob with pliers or a tool or when the knob is over tightened, the needle at the adjusting part may be damaged causing an operation failure. The knob should be operated by hand only. Do not tighten the knob further than the fully closed position of the needle (the position at which the needle stops rotating when it is tightened gently by hand).
- Do not turn off the input signal pressure (PIL) before reaching the delay time. When the input signal pressure (PIL) is turned off before reaching the delay time, air flows out momentarily (about 1/10 seconds) to the outlet side, which may cause devices and components on the outlet side to operate unintentionally.

Operation

⚠ Caution

- Differences in the delayed time may be larger due to adhesion of the seal when the product is operated for the first time following an extended period of non-operation. When the product is operated after an extended period of non-operation, the tolerance for the accuracy of repeatability for the time delay may be outside of the $\pm 10\%$ range. To eliminate this issue, run the time delay valve a number of cycles prior to operation.

Maintenance

⚠ Warning

- Perform inspection on a regular basis as necessary, such as at the beginning of operation, to verify that the time delay valve operates properly.
- Check whether the bolts on the mounting surface or the VR21 body are loose or damaged. If the bolts are loose, refer to the drawing below and use a hexagon wrench or a Phillips head screwdriver to tighten them.

