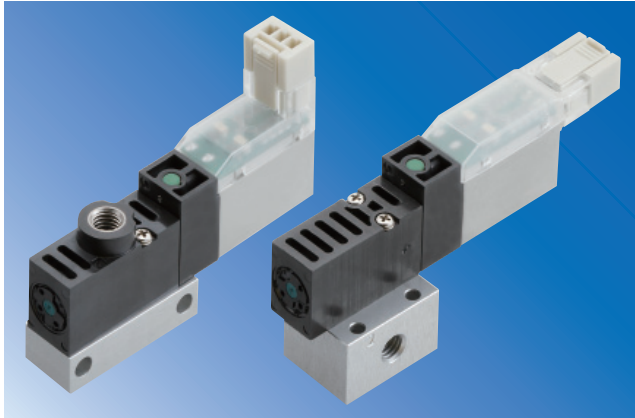


# 3QRA1/3QRB1 Series Self hold type



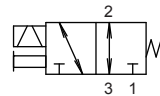
### Features

- State maintaining during power outage (Reduces wiring by external pilot)
- High-speed atmospheric release through large flow rate and quick response
- Does not require continuous power, which would reduce electric power and heat generation



### JIS symbol

- 2-position universal type



Port number 1,2,3 indicates:  
Port1: P, NC  
Port2: A, COM  
Port3: R, NO

## Self hold type added to 3QR series

### Product specifications Common specifications

Items	Descriptions
Type of valve and operation method	Direct-acting poppet valve
Working fluid	Compressed air and low vacuum
Max. working pressure MPa	0.70
Min. working pressure MPa	Low vacuum: -100 KPa
Withstanding pressure MPa	1.05 (Low vacuum: -101 KPa)
Max. working pressure differential MPa	0.70
Ambient temperature °C	-5 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not available *
Protective structure	Dust proof
Vibration/shock m/s <sup>2</sup>	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible

\* Lubrication will deteriorate the performance.

### Individual specifications

Items		3QRA1	3QRB1	M3QRA1	M3QRB1
Port size	Port 1	M5		Rc1/8	
	Port 2	M5		M5	
	Port 3	M5		Rc1/8	
Response time Note 1	ms	5ms or less			
Weight	g	28	31	23 (discrete solenoid valve)	

Note 1: Response time is the value for continuous operation under the conditions of 0.5 MPa supply pressure and 20°C.

### Flow characteristics

Model no.	Port 1 → 2		Port 2 → 1		Port 2 → 3		Port 3 → 2	
	C[dm <sup>3</sup> /(s·bar)]	S(references) [mm <sup>2</sup> ]	C[dm <sup>3</sup> /(s·bar)]	S(references) [mm <sup>2</sup> ]	C[dm <sup>3</sup> /(s·bar)]	S(references) [mm <sup>2</sup> ]	C[dm <sup>3</sup> /(s·bar)]	S(references) [mm <sup>2</sup> ]
3QRA1	0.30	1.5	0.32	1.6	0.32	1.6	0.30	1.5
3QRB1	0.30	1.5	0.34	1.7	0.36	1.8	0.34	1.7
M3QRA1	0.30	1.5	0.33	1.6	0.32	1.6	0.30	1.5
M3QRB1	0.30	1.5	0.34	1.7	0.36	1.8	0.34	1.7

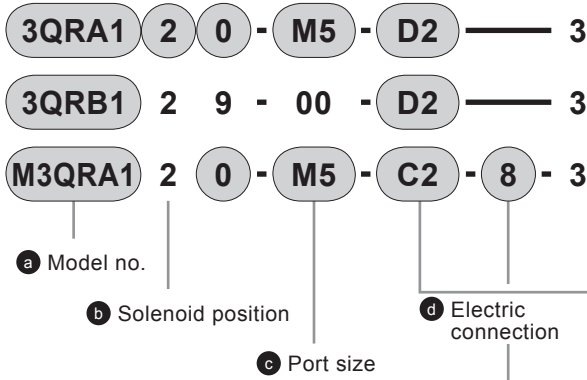
### Electric connection circuit diagram

Type	Electric wire circuit diagram	Wiring method
DC With surge suppressor and light		C-connector (C2*/C3) D-connector (D2*/D3) With polarity

Please make sure to read the safety precautions in "3 Port Direct Acting Valve 3QRA1/3QRB1 Series" (Catalog No. CC-1020A) before use.

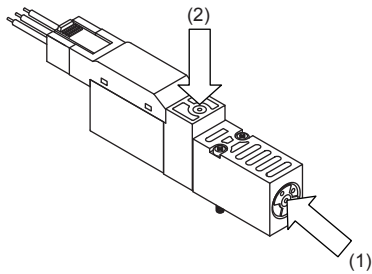
# 3QRA/3QRB Series

How to order

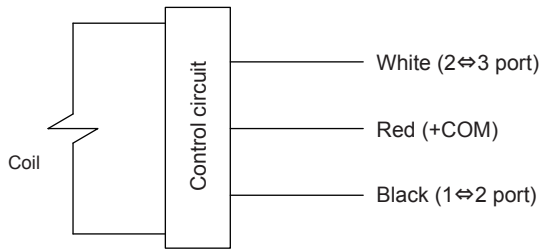


<Manual override>

Flow path can be switched by pushing (1) or (2) in the manual override. ((1):1→2,(2):2→3)  
Push the manual override from the front using a thin-tipped tool such as a precise screw driver.

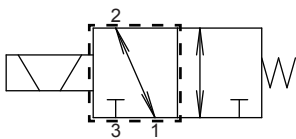


<Input signal and solenoid valve status>

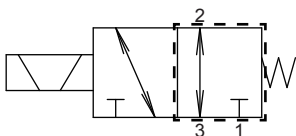


<Energizing and solenoid valve status>

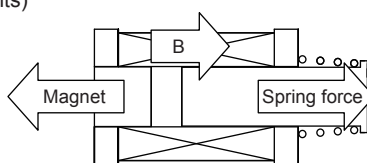
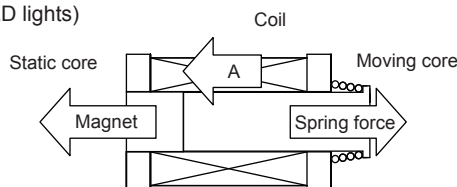
(1) Red and black are energized (Green LED lights)



(2) Red and white are energized (Red LED lights)



<Operational principle>



## CAUTION

- Precautions when energized
  - Limit continuous power to less than 30 seconds.
  - Limit powering ratio to 50% or less.
  - Minimum time of excitation is 50ms or more.
  - Do not energize black and white lead wire simultaneously.

Solenoid valves will not operate if they are simultaneously energized. The state before powering will be maintained (LED will light on both sides).  
From that state, operation will start if the timing of shutting off the power of both sides differs. Use caution.
- Malfunction can occur if magnetic substances are placed near the solenoid valve.  
Make sure to keep a distance of 10cm or more from magnetic substances.
- The holding position can change during installation and transport due to impact exceeding the specifications. Before use, verify positioning with manual or electric operation.

<When red and black are energized>

Coil force faces the "A" direction causing the magnet's force and coil force "A" to exceed the spring's force.  
Thus, the static core and moving core will adhere. (Even if power is shut off, it will remain adhered.)

<When red and white are energized>

Coil force faces the "B" direction causing coil force "B" and the spring's force to exceed the magnet's force.  
Thus, the static core and moving core will separate. (Even if power is shut off, they will remain apart.)

Symbol	Descriptions	a Model no.			
		Discrete		Manifold	
		Body porting	Sub plate porting	Body porting	Sub plate porting
		3QRA12	3QRB12	M3QRA12	M3QRB12
<b>b Solenoid position</b>					
2	2-position single solenoid (self hold)	●	●	●	●
8	Mix manifold			●	●
<b>c Port size</b>					
M5	M5	●	●	●	●
<b>d Electric connection</b>					
C-connector (axial lead wire)					
C2	Lead wire (300 mm) with surge suppressor and light	●	●	●	●
C20	Lead wire (500 mm) with surge suppressor and light	●	●	●	●
C21	Lead wire (1000 mm) with surge suppressor and light	●	●	●	●
C22	Lead wire (2000 mm) with surge suppressor and light	●	●	●	●
C3	No lead wire with surge suppressor and light	●	●	●	●
D-connector (radial lead wire)					
D2	Lead wire (300 mm) with surge suppressor and light	●	●	●	●
D20	Lead wire (500 mm) with surge suppressor and light	●	●	●	●
D21	Lead wire (1000 mm) with surge suppressor and light	●	●	●	●
D22	Lead wire (2000 mm) with surge suppressor and light	●	●	●	●
D3	No lead wire with surge suppressor and light	●	●	●	●
<b>e Station number</b>					
2 to 20	2 stations to 20 stations			●	●

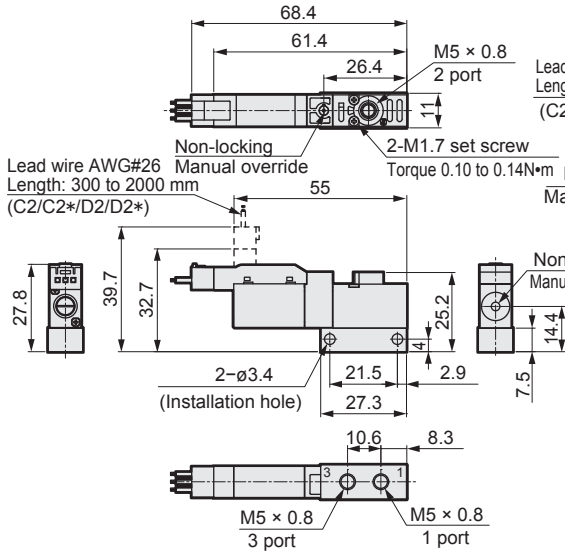
## Electric connection

C2	C3	D2	D3
C-connector with lead wire, with surge suppressor and light	C-connector No lead wire with surge suppressor and light	D-connector with lead wire, with surge suppressor and light	D-connector No lead wire with surge suppressor and light
• Lead wire length C2 : 300mm C20: 500mm C21: 1000mm C22: 2000 mm		• Lead wire length D2 : 300mm D20: 500mm D21: 1000 mm D22: 2000 mm	

## Dimensions

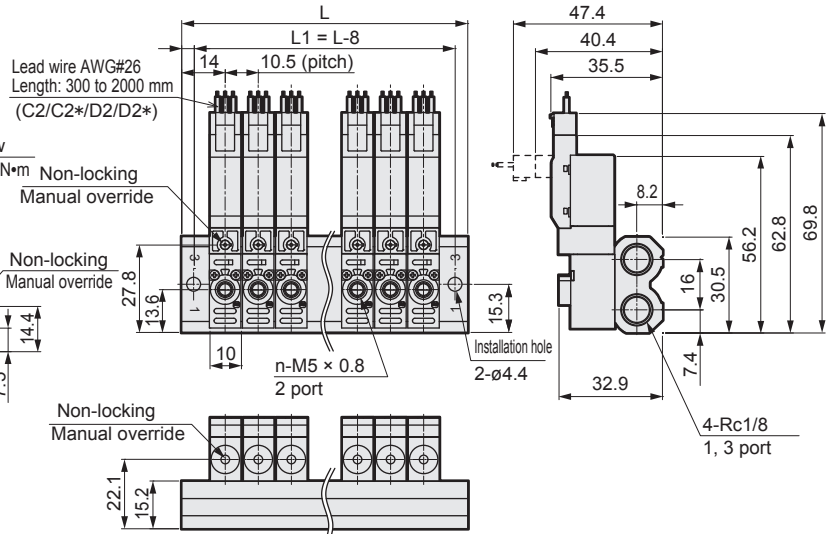
### ● 3QRA120-M5

• C-connector (C2/C3) / D-connector (D2/D3)



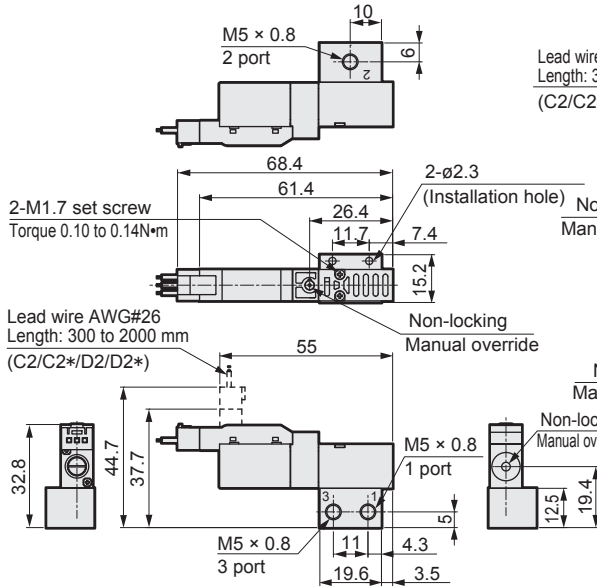
### ● M3QRA120-M5

• C-connector (C2/C3) / D-connector (D2/D3)



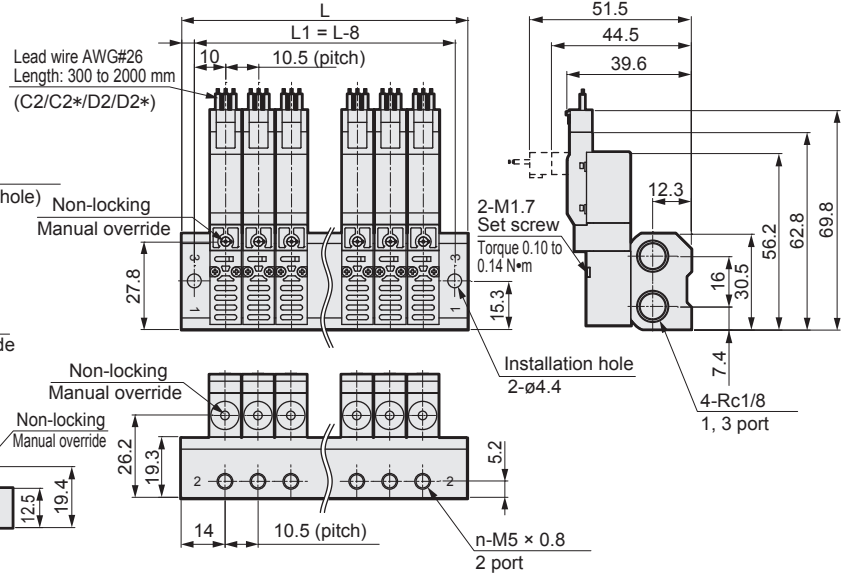
### ● 3QRB120-M5

• C-connector (C2/C3) / D-connector (D2/D3)



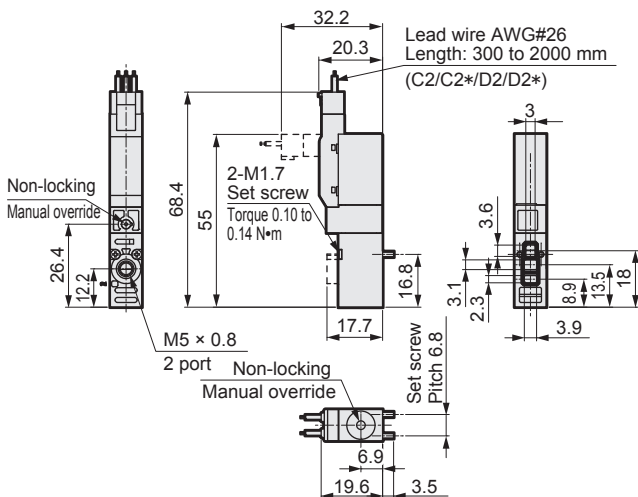
### ● M3QRB120-M5

• C-connector (C2/C3) / D-connector (D2/D3)



### ● 3QRA/B119-00 (discrete solenoid valve)

• C-connector (C2/C3) / D-connector (D2/D3)

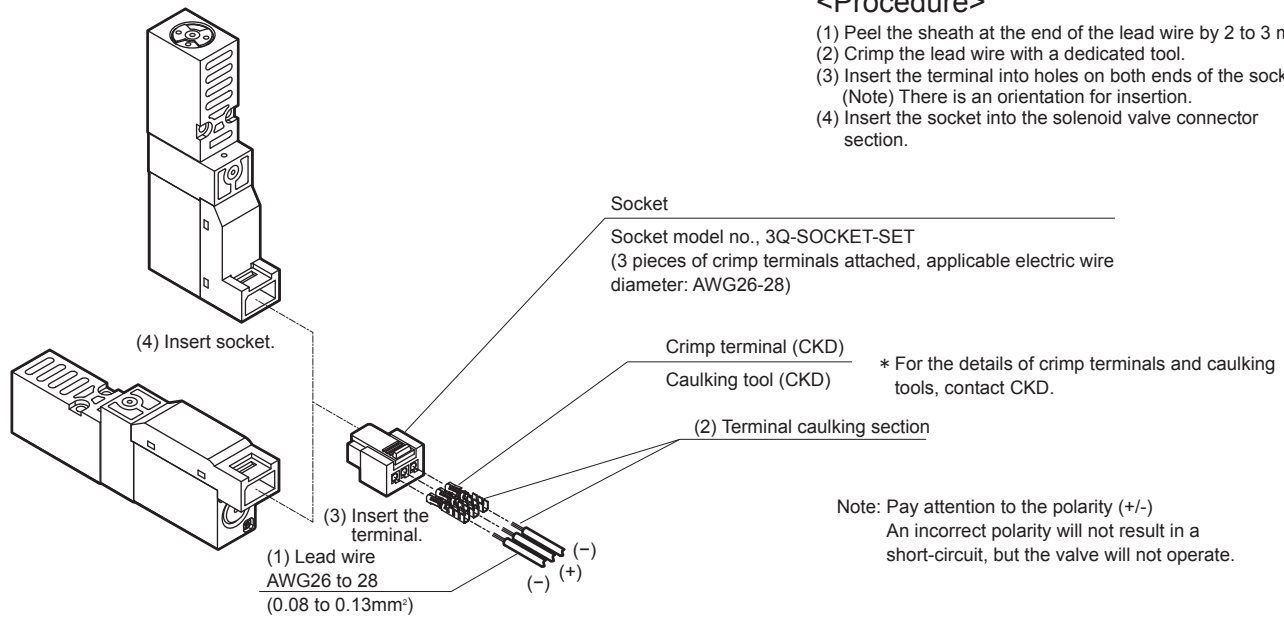


Station no.	2	3	4	5	6	7	8	9	10	
L	38.5	49.0	59.5	70.0	80.5	91.0	101.5	112.0	122.5	
L1	30.5	41.0	51.5	62.0	72.5	83.0	93.5	104.0	114.5	
Station no.	11	12	13	14	15	16	17	18	19	20
L	133.0	143.5	154.0	164.5	175.0	185.5	196.0	206.5	217.0	227.5
L1	125.0	135.5	146.0	156.5	167.0	177.5	188.0	198.5	209.0	219.5

# 3QRA/3QRB Series

## C-/D-connector wiring methods

Referring to the figure below, wire the connector according to procedures (1) to (4).



## M3QRA/B1 How to prepare manifold specification sheet

● Manifold model no.

**M3QRA/B1** 8 0 - **M5** - C2 - 8 - 3

Piping type    Note 1                      Port size    Electric connection    Station no.

Note 1: Combination of the above-specified points is not acceptable. Specify by a model number.

Part name	Model no.	Layout																				Quantity	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Valve	3QRA129-□																						
	3QRB129-□	○	○	○		○	○	○															6
Masking plate	3QR1-MP				○					○													2

### Preparing the manifold specifications

- Complete from the left end, with the piping port facing forward.
- Different manifold specifications are used for each model, so fill out corresponding specifications.

## M3QRA/B1 manifold specification sheet

● Contact                      ● Quantity                      Set                      ● Request date                      month                      day

Slip No.	Order No.
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● Manifold model no.

**M3QR** A/B 1 0 - **M5** -   -   - 3

Note 1                                      Port size    Electric connection    Station no.

Note 1: Combination of the above-specified points is not acceptable. Specify by a model number.

Part name	Model no.	Layout																				Quantity	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Valve	3QRA129-□																						
	3QRB129-□																						
Masking plate	3QR1-MP																						

Issue                      /                      /

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Your company name

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Contact messrs

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Purchase order No.

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