

SPV03 SERIES FLOW BALANCING MODULATING VALVE

DESCRIPTION

SPV03 series flow balancing modulating valve is combined flow sensor and SBV characterized opening ball valve, which has equal percentage flow characteristic. The sizes are from DN20 to DN50. Users can preset the flow limit under maximum Kv rating according to terminal design request even before water running. The valve will be positioned to its optimum operating position according to the signal from the actuator until the preset flow limit is reached and then the preset flow rate limit will be maintained.

SPV03 Series flow balancing modulating ball valve assures that all terminal equipment will perform as specified and HVAC system will operate under accurately and dynamically balanced conditions. Terminal equipment with SPV03 Series automatic flow balancing control ball valves will not exceed design flow even after modifications or additions to the system.

PRODUCTS (DN20~DN25)



MATERIAL

Valve: forging brass (HPb59-1)

Impeller shaft: alloy for shaft tip (3J40)

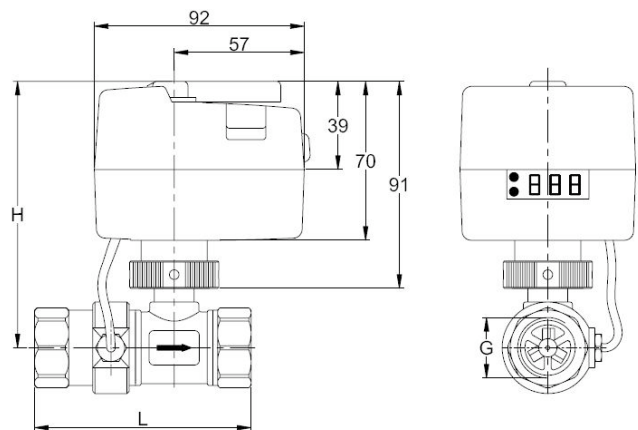
Impeller: glass-fiber reinforced nylon (FRPA66)

Bearing: jewel bearing

Impeller bracket: Polyphenylene sulfide (PPS)

VALVE DATA

CONNECTION	Thread
RATED PRES.	PN25
CLOSE OFF PRES.	600KPa
CONTROL PRECISION	±5%FS
CONTROL CHAR.	Equal percentage
MEDIA TEMP.	2-80°C



DIMENSIONS (mm)

MODEL	DN SIZE	CONTROLABLE FLOW RANGE (m ³ /h)	L*	H*	G	LENGTH OF THREAD
SPV03G20	20	0.5~5.0	95	117	3/4"	15
SPV03G25	25	1.0~10.0	105	122	1"	17



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ACTUATOR DATA

MODEL	RATED VOLTAGE	POWER CONSUMPTION	CONTROL SIGNAL	TORQUE	OPERATION TIME OF FULL STROKE	MAX. ROTATING ANGLE	IP CLASS
SPA03-024	24VAC	5VA (load)	Tristate floating	4Nm	45s (90s for option)	90°<limiter≤95°	IP54

PRODUCTS (DN32~DN50)



MATERIAL

Valve: forging brass (HPb59-1)

Impeller shaft: alloy for shaft tip (3J40)

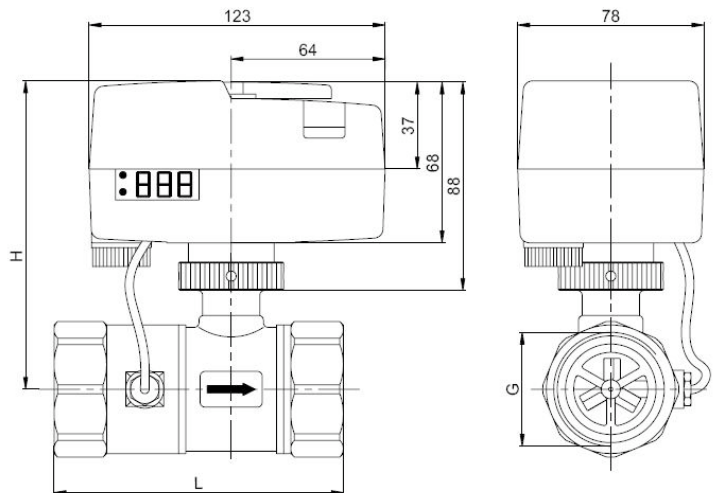
Impeller: glass-fiber reinforced nylon (FRPA66)

Bearing: jewel bearing

Impeller bracket: Polyphenylene sulfide (PPS)

VALVE DATA

CONNECTION	Thread
RATED PRES.	PN25
CLOSE OFF PRES.	600KPa
CONTROL PRECISION	±5%FS
CONTROL CHAR.	Equal percentage
MEDIA TEMP.	2-80°C



DIMENSIONS (mm)

MODEL	DN SIZE	CONTROLABLE FLOW RANGE (m ³ /h)	L*	H*	G	LENGTH OF THREAD
SPV03G32	32	3.2~16	125	128	1 1/4"	19
SPV03G40	40	5~25	125	128	1 1/2"	19
SPV03G50	50	8~40	144	132	2"	22



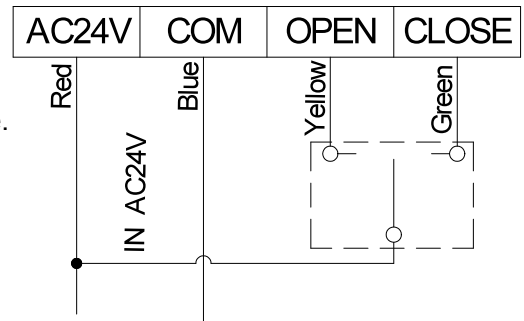
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ACTUATOR DATA

MODEL	RATED VOLTAGE	POWER CONSUMPTION	CONTROL SIGNAL	TORQUE	OPERATION TIME OF FULL STROKE	MAX. ROTATING ANGLE	IP CLASS
SPA04-024	24VAC	5VA (load)	Tristate floating	6Nm	60s* (120s for option)	90°<limiter≤95°	IP54

WIRING DIAGRAM OF ACTUATOR

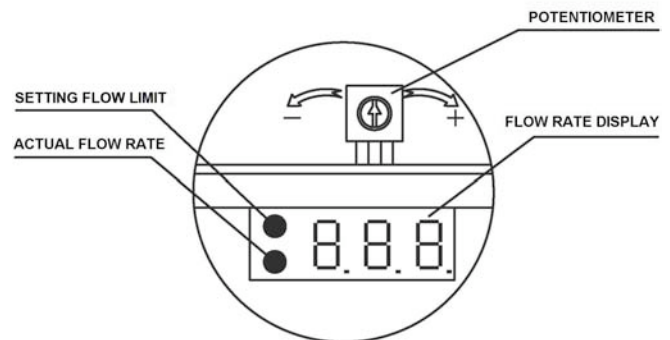
The wiring diagrams of SPA03-024 and SPA04-024 are the same.



SET MAXIMUM FLOW LIMIT

HOW TO SET

1. Open the cover of the actuator.
2. Set the position of JP2 switch according to valve size. If the actuator and valve are installed separately during system installation, please re-set the actuator to make sure the actuator is in correct control state. When power is off: set JP2 to the correct position. When power is already on: set JP2 to the correct position, then press "RESET" to reposition the actuator. (Note: This JP2 switch is only for SPA04-024.)
3. Please use small size screwdriver to adjust the potentiometer in the actuator to set the ideal flow limit.
4. Close the actuator cover and screw down the screw



Note: the flow limit can be preset before delivery by request or set onsite.

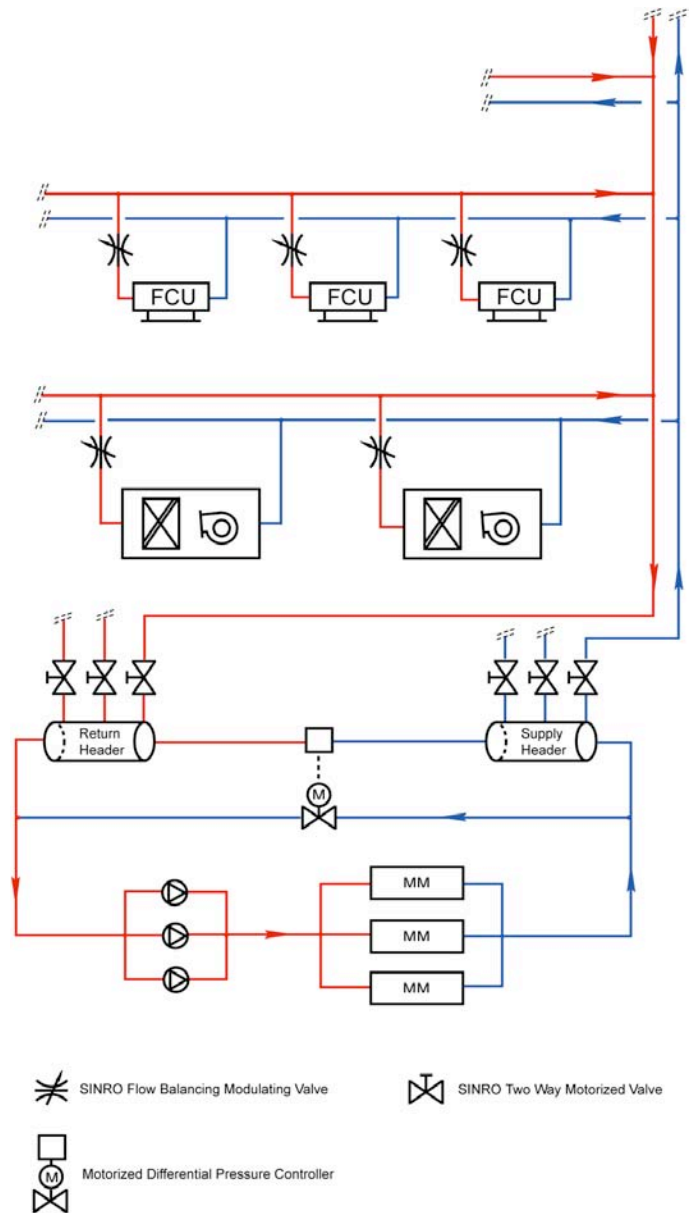
TYPICAL APPLICATION

KG flow balancing modulating valves are widely used on the terminal equipments (floor branch pipe, or zone main pipes) of HVAC system. In a flow inconstant large complex HVAC system, flow balancing can be easily achieved with KG flow balancing modulating valve. Even in direct return system, the performance of individual equipment can reach the design capacity without affected by different operation states of other parallel connection or serious connection equipment. (Please see the drawing on the right)

FEATURES AND BENEFIT

The performance of the system which installed with KG patented flow balancing modulating valve is perfect as you wish.

1. Combines flow rate display and the functions of flow balancing valve, zone valve and shut-off valve.
2. Large close off pressure range (30~600KPa). In this range, the valve can control the actual flow rate preciously to balance the real-time flow distribution.
3. Easy to set flow limit without calculating flow resistances at each point of equipments.
4. Without adjusting. Saving labor. And no restrict to installation space. Avoid to misadjusting.
5. Change the operation state of one area does not affect the balancing performance of other area. When the old system is expanded or changed, if the design flow of certain equipments doesn't change, it would not be necessary to reset the flow limit of the valve.
6. Avoid the equipment damage caused by flow overload.
7. With KG balancing modulating valve, the system can be designed as direct return system. Comparing with the reversed return system, it can save lot of money on initial investment, installation and installing material.
8. Make refrigerating battery and pumps operating at ideal working states, and increase operation efficiency. Accordingly, operation cost is saved.



9. In view of the above-mentioned facts, the user can choose equipment (pumps, air handlers and chillers) with smaller margin to save initial investment.

INSTALLATION

1. Please do not install other equipments near KG balancing modulating valve.
2. Installation position:
The flow balancing modulating valve can be installed on water supply pipe or on return water pipe (only one balancing valve in one pipe loop). For the application in side loop of substation, please install KG balancing modulating valve on low temperature pipe for an easy adjusting. For the balancing valve on header pipe, please install it after water supply pump (pump outlet) to avoid cavitations caused by low pressure.
3. Please install KG flow balancing modulating valve on straight pipe.
Because KG balancing valve is combined with flow rate detector which request smooth flow at valve inlet and outlet, please install KG flow balancing modulating valve on straight pipe, in order to get accurate flow rate.
4. Please notice the balance change between new system and old system.
5. Please do not change the setting point randomly.
6. No need to install globe valve in loops.
7. Please reset KG flow balancing modulating valve on the main pipe when the number of loops is changed.

