

NTE-20S Miniature Motorized Ball Valve Installation & Operation Instruction Manual



1. Feature:

NTE-20S series miniature electric actuated ball valve is designed for HVAC, water metering, air controlling system and water treatment. More functions are available as request. And we have acquired several patents. The integral design of the actuator and valve body mostly reduces the outline dimension. The ball and stem apply with floating seal construction, which can reduce the torque, furthermore, overcome the disadvantage of the inflexible operation caused by the fouling.

2. NTE-20S Electric Actuator(Note: Dimension as Table 6.1)

3. Technical Data

Model	Manual	Max. Torque	Enclosure	Oper. Time	Ambient Temperature	Humidity	Lifetime
20S	Yes	2N.m	IP67	Apx. 5S	-20°C<≤45°C	<85% (Non-condensation)	Guaranteed 70,000 times

4. Parameter & Control Function

The relationship between the voltage range and working voltage of the different control functions.

Control Function	Working Voltage	Voltage Range	Power
B2	DC5V	4.5-5.5V	3W
	DC12V	11-15V	
B3(S)*2	DC5V	4.5-5.5V	4W
	DC12V	11-15V	
	AC/DC12V	11-15V	5W
	AC/DC24V	22-28V	
AC110V/220V	95-265V		
BD3(S)*2	DC5V	4.5-5.5V	3W
	DC12V	11-15V	
	AC/DC12V	11-15V	4W
	AC/DC24V	22-28V	
AC110V/220V	95-265V	5W	
B5	AC/DC12V	11-15V	4W
	AC/DC24V	22-28V	
	AC110V/220V	95-265V	
KT2	DC5V	4.5-5.5V	5W
	AC/DC12V	11-15V	
	AC/DC24V	22-28V	
	AC110V/220V	95-265V	

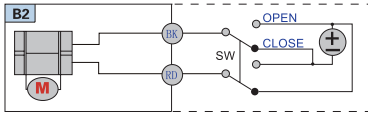
*1. Lifetime test condition: working pressure 1.0Mpa, medium: normal temp. water; Flow Cv.: 200L/h.
Different condition will influence the life.

*2. S: with feedback function

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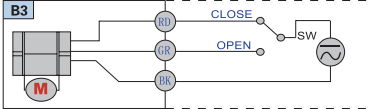
Actuators & Controls

4.2 Control Type



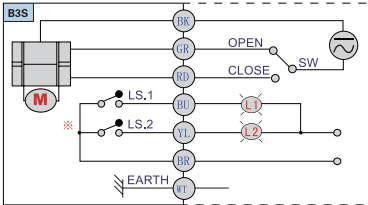
Instructions

- If SW is connected with [OPEN], the valve will open and keep on.
- If SW is connected with [CLOSE], the valve will close and keep off.



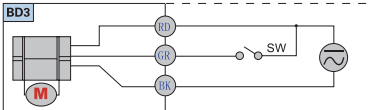
Instructions

- If SW is connected with GR, the valve will open and keep on.
- If SW is connected with RD, the valve will close and keep off.



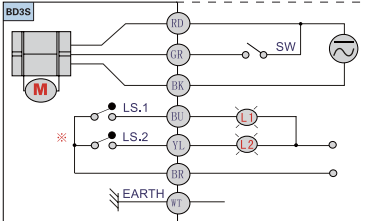
Instructions

- If SW is connected with GR, the valve will open and keep on.
- At the same time, L.S.1 connected and feedback open signal.
- If SW is connected with RD, the valve will open and keep on.
- At the same time, L.S.2 connected and feedback open signal.
- * Signal is synchronism with the valve position and earlier than it.



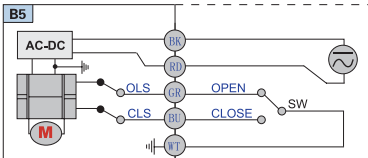
Instructions

- If SW is closed, the valve will open and keep on.
- If SW is opened, the valve will close and keep off.



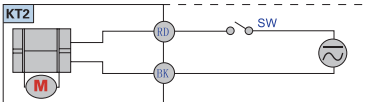
Instructions

- If SW is closed, the valve will open and keep on. At the same time, L.S.1 connected and feedback open signal.
- If SW is opened, the valve will close and keep on. At the same time, L.S.2 connected and feedback close signal.
- * Signal is synchronism with the valve position and earlier than it.



Instructions

- If SW is Connected with GR, the valve will open and keep on.
- If SW is connected with BU, the valve will close and keep on.
- * Note: WH, BU and BK can not connect with external power.



Instructions

- If SW is closed, the valve will open and keep on.
- If SW is opened, the valve will close and keep off.
- * Note: KT2 is the same as wiring of monostable solenoid valve.
- Attention: It should be supplied power at least 10 minutes before cutting the power automatically.

Note: 1. means both AC & DC power. When supply DC power, SW is connected with positive pole and BK is connected with negative pole.

2. The feedback function and manual operation can not be both available.

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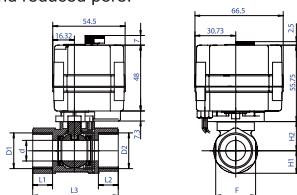
Actuators & Controls

5. Two-way valve technical data

Max working pressure	Medium Temperature
1.0MPa	0~100°C

6. Dimensions of electric actuated ball valve

6.1 Dimension of female screwed end reduced pore:



6.1.1 Connection dimension of female screwed end reduced pore

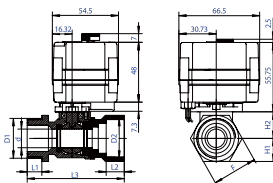
unit: mm

Size	D1/D2	d	L1/L2	L3	F	H1	H2	W (kg)
DN20	G3/4"	15	15	64.5	30	16.5	21.25	0.37
DN25	G1"	20	18	76	38	21.5	24.75	0.52
DN32	G1-1/4"	20	20	60	48	24	24.75	0.7

6.1.2 Material for major parts

Name	Body	Ball	Stem	Seat	Seal
Material	Brass with nickel plated, SS304, SS316	brass with Cr plated, SS304, SS316	Brass, 304,316	PTFE	EPDM

6.2 Dimension of female screwed end full pore:



6.3.1 Connection dimension of two-way female and male screwed end reduced port type

unit: mm

Size	D1/D2	d	L	L1	L2	F	H1	H2	W (kg)
DN20	G3/4"	15	67.5	10	15	29	16.5	21.25	0.37
DN25	G1"	15	80/90*	12	15	37	18.5	21.25	0.52
DN32	G1-1/4"	20	85	13	20	48	24	24.75	0.7

Note: *80: standard type, 90: extended type.

6.3.2 Material for major parts

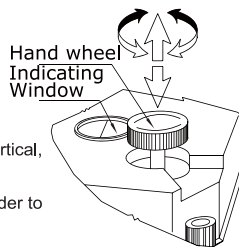
Name	Body	Ball	Stem	Seat	Seal
Material	brass with nickel plated	brass with Cr plated	Brass	PTFE	EPDM

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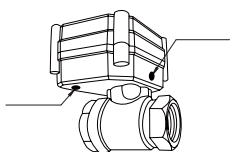
7. Instructions for Manual Operation

1. It is only permitted to use when power is cut off.
2. Lift the hand-wheel, and rotate the valve to the needed position.
3. When the red line on the indicator is horizontal, the valve is on; when vertical, the valve is off.
4. Press down the manual button after finishing the manual operation in order to work properly when energized.

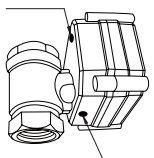


8. Attentions

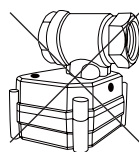
1. Please supply power in the voltage range, the working voltage means the input power voltage to the valve. The voltage bigger than the range will make the circuit burn up; while lower than the range will make the valve can not be open.
2. Terminals are used for testing, cut them when using.
3. Switches power supply is recommended, take the corresponding power (refer to the table 4.1.and keep 20%-30% duty rating.
4. Type F can not de-energize, soaking and flushing water to the air conn.. There are two plastic plugs for users to install in different directions as (Fig. 1) and (Fig. 2). After installation, open the plastic plug towards the ground to exclude moisture.



(Fig.1: Horizontal installation)



(Fig.2: Vertical installation)



(Fig.3)

5. Valve installed in the occasion where water is easily fouled, electronic decaling equipment is needed to install in the main pipe, otherwise it will reduce the product lifetime.
6. The filter is suggested when the medium is sandiness. Otherwise it will accelerate the damage of seals and cause the leakage.
7. Actuator should not be installed downward as (Fig. 3)
8. Please install protective equipment outdoor.
- 9.The installation should be standardized, barbaric operating is prohibited.

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