

1 Technical Parameters

Series	Manual Override	Max Torque	Enclosure	Running time	Ambient Temp ^{※2}	Ambient Humidity	Service Life ^{※3}	Medium pressure	Medium temperature ^{※4}
20S	yes	2N.m	IP67 F type ^{※1}	about 5-7s	-20℃~+45℃	IP67≥85%(non-condensing) F type >=85%	about 70000 cycles	1.0MPa	0~100℃
20SJ	no								

※1 Type F: heating resistor, As Per Q/12NK 4404-2022 (no IP67).

※2 Ambient temperature > 45℃ or < -20℃ can be customized.

① At the ambient temperature of -40℃, power on is required for more than 15 minutes (30 minutes is recommended) before use. The higher the ambient temperature is, the shorter the power on time can be.

② If user use the product at the ambient temperature of -40℃ for long time, it needs to be insulated. For example, add heating cable around the motorized valve. If the ambient temperature is over -20℃, then the heating cable can be canceled.

※3 This service life is the testing data in the condition of 1.0MPa, 200L/hour, normal tap water as medium. Different working occasions will influence the service life.

※4 Medium temperature > 100℃ need special bracket, CPVC Plastic Valve ≤ 90℃.

2 Wiring Electrical data

Wiring	Nominal voltage	Nominal voltage range	Power consumption
B2(J) [※]	DC5V	DC4.5-5.5V	3W
	DC12V	DC10-15V	
	DC24V	DC9-30V	
B3(J)/BD3(J) B33(J)/B44 [※]	DC5V	DC4.5-5.5V	3W
	DC12V	DC10-15V	
	DC24V (Quick-opening type)	DC22-30V	10W
	AC/DC24V	AC9-26V/DC9-30V	4W
B5	AC220V	AC95-265V/DC100-300V	5W
	AC/DC24V	AC9-26V/DC9-30V	4W
KT2(J)/KT32(J) [※]	AC/DC24V	AC95-265V/DC100-300V	5W
	AC220V	AC95-265V/DC100-300V	8W
KT2H(J) [※]	AC/DC24V	AC9-26V/DC9-30V	10W
	AC220V	AC95-265V/DC100-300V	13W

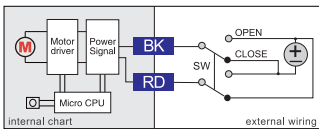
※ J: With feedback function.

3 Vibration amplitude

10 to 50HZ ≤ 1.0mm Double amplitude, vibration shock ≤ 2g (Customized for special vibration occasions)

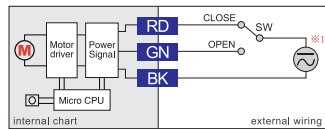
4 Wirings

B2



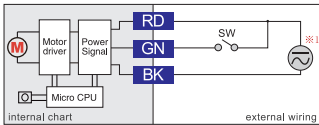
- If SW is connected with [OPEN], the valve will open and keep on.
- If SW is connected with [CLOSE], the valve will close and keep off.
- Only DC power.

B3



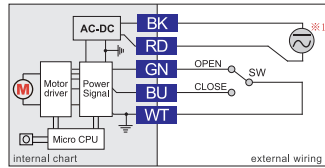
- If SW is connected with GN, the valve will open and keep on.
- If SW is connected with RD, the valve will close and keep off.

BD3



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

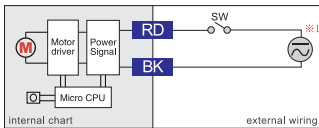
B5



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

Notes: Control cables (WT, BU, GN) are forbidden to be connected with power.

KT2 / KT2H



Normally closed type (NC)

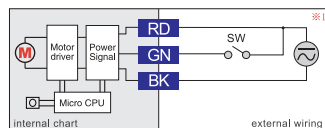
- If SW is closed, the valve will open and keep on.
- If SW is opened, the valve will close and keep off.

Normally open type (NO)

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

Note: KT2: charge time > 60s
KT2H: NO charge time

KT32



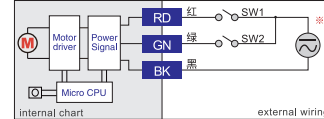
Normally closed type (NC)

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

Normally open type (NO)

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

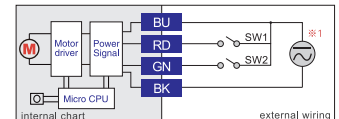
B33



SW1	SW2	Valve ball target position		
		2-way	3-way	
connect	disconnect	Close all	position 1	
disconnect	connect	Open all	position 2	
connect	connect	45° ± 10%	position 3	

- two-way 45°, can be customized;
- please refer to the "5 Flow Direction" for more valve positions.

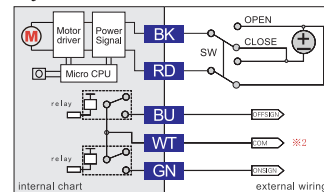
B44



SW1	SW2	Valve ball target position		
		2-way	3-way	
disconnect	disconnect	Close all	position1	
connect	disconnect	Open 30° ± 10%	position2	
disconnect	connect	Open 60° ± 10%	position3	
connect	connect	Open all	position4	

- two-way 30°/60°, can be customized;
- please refer to the "5 Flow Direction" for more valve positions.

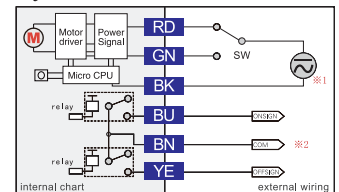
B2J



- If SW is connected with [OPEN], the valve will open and keep on. When the valve is open completely, GN is connected with WT, giving signal of opening.
- If SW is connected with [CLOSE], the valve will close and keep off. When the valve is closed completely, BU is connected with WT, giving signal of closing.
- Only DC power.

Note: WT is not connected with BU and GN, when the actuator is running.

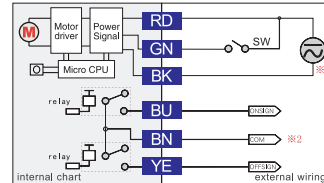
B3J



- If SW is connected with GN, the valve will open and keep on. When the valve is open completely, BU is connected with BN, giving signal of opening.
- If SW is connected with RD, the valve will close and keep off. When the valve is closed completely, YE is connected with BN, giving signal of closing.

Note: BN is not connected with BU and YE, when the actuator is running.

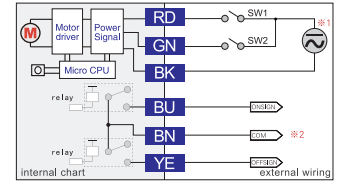
BD3J



- If SW is closed, the valve will open and keep on. When the valve is open completely, BU is connected with BN, giving signal of opening.
- If SW is opened, the valve will close and keep off. When the valve is closed completely, YE is connected with BN, giving signal of closing.

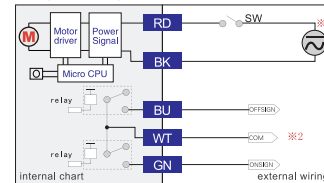
Note: BN is not connected with BU and YE, when the actuator is running.

B33J



- | SW1 | SW2 | Valve ball target position | | | Feedback signal |
|------------|------------|----------------------------|------------|-----------------------|-----------------|
| | | 2-way | 3-way | | |
| connect | disconnect | Close all | position 1 | YE connect with BN | |
| disconnect | connect | Open all | position 2 | BU connect with BN | |
| connect | connect | 45° ± 10% | position 3 | YE BU connect with BN | |
- BN is not connected with BU and YE, when the actuator is running.
 - two-way 45°, can be customized;
 - please refer to the "5 Flow Direction" for more valve positions.

KT2J / KT2HJ



Normally closed type (NC)

- If SW is closed, the valve will open and keep on. When the valve is open completely, GN is connected with WT, giving signal of opening.
- If SW is opened, the valve will close and keep off. When the valve is closed completely, BU is connected with WT, giving signal of closing.

Normally open type (NO)

- If SW is opened, the valve will open and keep on. When the valve is closed completely, BU is connected with WT, giving signal of closing.
- If SW is closed, the valve will close and keep off. When the valve is open completely, GN is connected with WT, giving signal of opening.

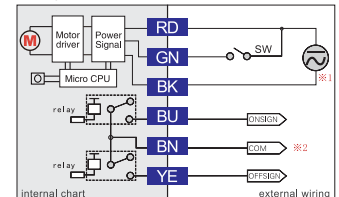
Note 1: WT is not connected with BU and GN, when the actuator is running.

Note 2: KT2 need to charge [SW is closed] ≥ 60s.

Note 3: After power cut, the feedback signal will not disappear immediately, because of internal energy storage element.

Note 4: KT2: charge time > 60s
KT2H: NO charge time

KT32J



Normally closed type (NC)

- If SW is closed, the valve will open and keep on. When the valve is open completely, BU is connected with BN, giving signal of opening.
- If SW is opened, the valve will close and keep off. When the valve is closed completely, YE is connected with BN, giving signal of closing.

Normally open type (NO)

- If SW is opened, the valve will open and keep on. When the valve is closed completely, YE is connected with BN, giving signal of closing.
- If SW is closed, the valve will close and keep off. When the valve is open completely, BU is connected with BN, giving signal of opening.

Note 1: BN is not connected with BU and YE, when the actuator is running.

Note 2: After power cut, the feedback signal will not disappear immediately, because of internal energy storage element.

※1 ⚡ means DC and AC voltage, when using DC, RD&GN is connected with positive, BK is connected with negative.

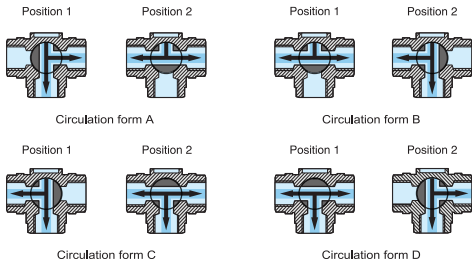
※2 The feedback signal is synchronous with valve position.

Note 1: "J" means relay type feedback signal, after power cut the signal will disappear.

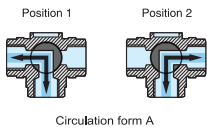
Note 2: Feedback signal contact load capacity: 0.5A@30VDC, 0.1A@250VAC.

5 Flow Direction

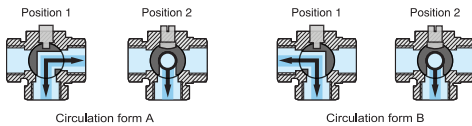
■ T port



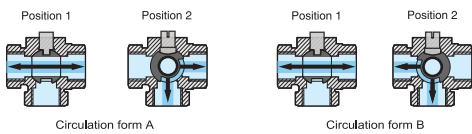
■ L port



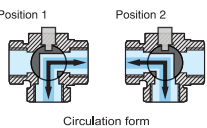
■ single L 90°



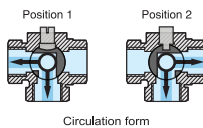
■ Simple L 90°



■ single L 180°



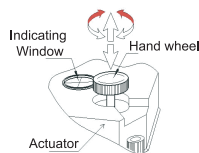
■ double L 90°



Note 1: When Angle of rotation is 180°, the running time is about 10 seconds.
 Note 2: position 1 means open, position 2 means closed.

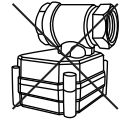
6 Instructions for Manual Override

1. It is only permitted to use when power is cut.
2. Lift the hand-wheel, and turn it left or right until the valve is in place.
3. When the red line on the indicator is horizontal, the valve is on; when vertical, the valve is off.
4. Press down hand-wheel after using manual override in order to work properly when power is supplied.



7 Warnings

1. Make sure voltage in practicable range. Working voltage means the voltage reaching valve. The circuit will be burned if surpassing the upper limit. Valve will have problem to work if lower than the range.
2. The terminal is for inspection on production line. Please cut it when using.
3. We recommend using switching power supply, the power should refer to [2 Wiring Electrical data], keep 20~30% surplus.
4. For heavy water scale applications, electric scale removing equipments should be installed, otherwise the valve service life will be shortened.
5. If there is much heavy scale, sand in your working medium, filters should be installed, otherwise it will harm the seal and make the valve leak.
6. Actuators can not be installed upside-down, as picture.
7. For outdoors installment, protection should be prepared.
8. Install the valve normatively without rudeness.



Wrong installment

8 Working environment

1. Indoor and outdoor are both optional.
 2. For the non-explosion-proof products in this manual, please do not use them in flammable and explosive environment.
 3. You need to install protective device for the actuator if it is exposed to the rain or sunshine.
 4. Please pay attention to the ambient temp.
 5. When installing, you need to consider the reserved space for wiring and repairing.
 6. When power on, it is not allowed to dismantle actuator and valve.
 7. When power on, it is not allowed to do wiring.
- ※1 Absolutely no falling down the ground, which will hit the device and lead to improper operation.
 ※2 Absolutely no standing on the device, which will cause device malfunction or personal accident.
 ※3 It is forbidden to do wiring project in rainy day or when there is water splash.

9 Safety notice

1. In order to use the device safely for a long term, please pre-read the manual carefully to ensure correct use.
2. Notice item: Please understand the product specification and using method clearly to prevent personal safety danger or device damage.
3. In order to indicate damage and danger, here we classify them as "warning " and "notice ".
4. Both of contents are very important, which should be obeyed strictly.
5. "Warning ": It will cause death or serious injury if not obeyed.
6. "Notice ": It will cause slight injury or device damage if not obeyed.
7. Subject to technical changes.



Inform respectfully: The manual will be subject to change without notice.
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 Post Code: 300190