Taizhou Tonhe Flow Control Equipment Co., Ltd

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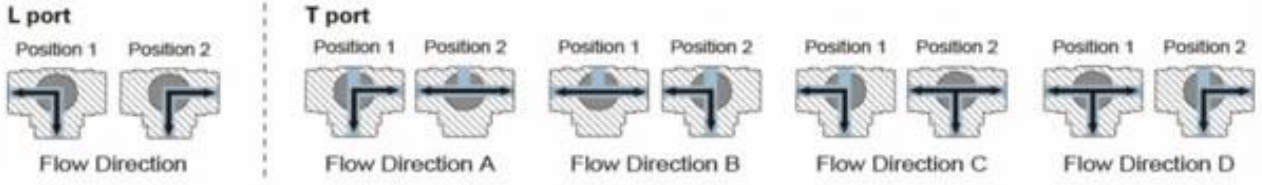
Tonhe A20-T 3 way horizontal Series

MOTORIZED BALL VALVE

Technical Parameters

Product size	□NPT/BSP 1/4” 3/8” 1/2” 3/4” 1”
Maximum working pressure	1.0MPa
Circulation medium	Fluid, air
Rated voltage	□DC5V □DC12V □DC24V □DC9-35V □AC110-230V
Wiring control methods	□CR2-01 □CR2-02 □CR3-01 □CR3-02 □CR3-03 □CR3-04 □CR3-05 □CR4-01 □CR5-01 □CR5-02 □CR7-01 □CR7-02 □CR7-03 □CR7-04
Working current	≤500mA
Open/close time	≤5S
Life time	70000 times
Valve Body material	□Brass □Brass nickel plated
Actuator material	Engineering Plastics
Sealing material	FKM & PTFE
Actuator rotation	90°
Max. torque force	2 N.M
Cable Length	0.5m
Environment temperature	-15℃～50℃
Liquid temperature	2℃～90℃
Manual override	□Yes No（Optional）
Indicator	□Yes No （Optional）
Protection class	IP67
Certificate	CE(LVD EMC),ROHS and SS304 valve passed NSF61-G
Company passed	Iso9001:2008
Product Insurance	PICC

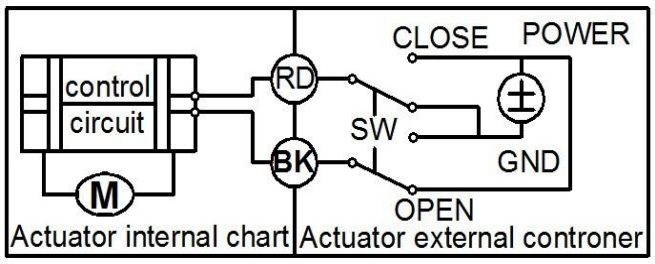
Flow Direction



Please confirm which flow direction you want?

Wiring diagram

CR2 01 Wiring Diagram (2 wires control)

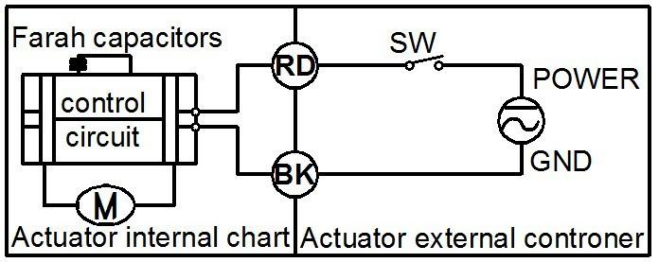


·RD connect with positive, the BK connect with negative, the valve closed, the actuator automatically power off after in place , the valve remains fully closed position .

·BK connect with positive, the RD connect with negative, the valve open, the actuator automatically power off after in place, the valve remains fully open position .

* Suitable Working Voltage: DC5V, DC12V, DC24V
* Exceeding the working voltage is forbidden

CR2 02 Wiring Diagram (2 wires control – Power reset function)

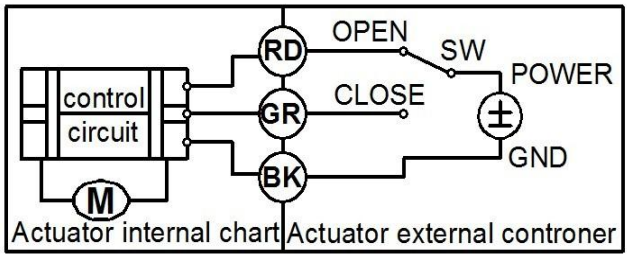


·When SW is CLOSED, the valve OPEN, the actuator automatically power off after in place.

·When SW is OPEN, the valve CLOSED, the actuator automatically power off after in place.

* Suitable Working Voltage: AC/DC9-35V，AC/DC110V-230V
* Exceeding the working voltage is forbidden

CR3 01 Wiring Diagram (3 wires control)



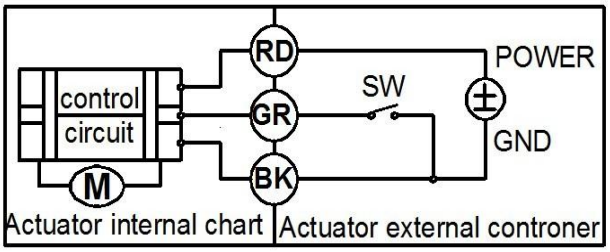
·RD & GR connect with positive, BK connect with negative

·When OPEN(RD) & SW connected , the valve open, the actuator automatically power off after in place , valve remains fully open position

·When CLOSE(GR) & SW connected, the valve closed, the actuator automatically power off after in place, valve remains fully closed position.

* Suitable Working Voltage: DC5V, DC12V, DC24V
* Exceeding the working voltage is forbidden

CR3 02 Wiring Diagram (3 wires control)



·RD connect with positive, the BK & GR connect with negative

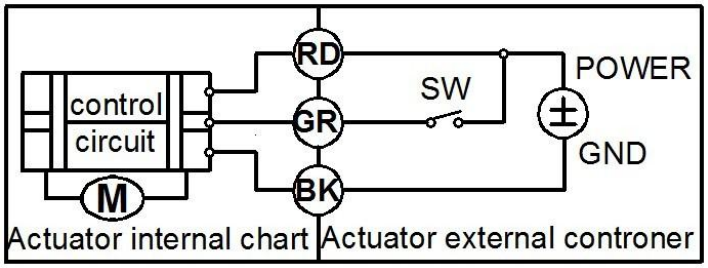
·SW CLOSED, the valve OPEN, the actuator automatically power off after in place.

·SW OPEN, the valve CLOSED, the actuator automatically power off after in place.

* Suitable Working Voltage: DC7-35V

* Exceeding the working voltage is forbidden

CR3 03 Wiring Diagram (3 wires control)



·RD& GR connect with positive, the BK connect with negative。

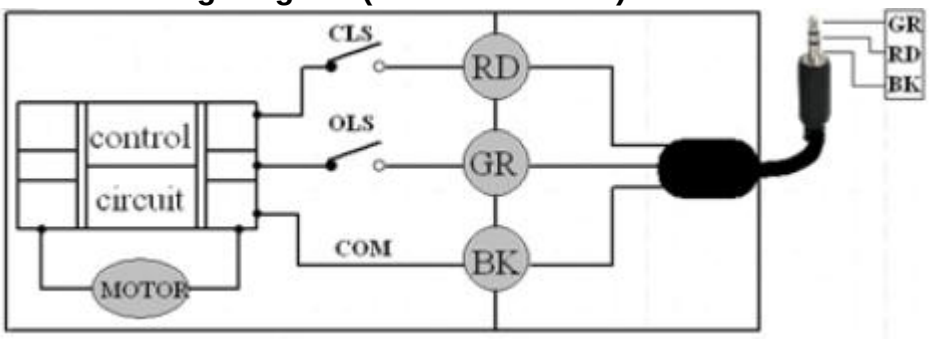
·SW CLOSED, the valve OPEN, the actuator automatically power off after in place

·SW OPEN, the valve CLOSED, the actuator automatically power off after in place.

* Suitable Working Voltage: AC/DC9-35V, AC110-230V

* Exceeding the working voltage is forbidden

CR3 04 Wiring Diagram (3 wires control)



·RD & GR connected with positive, and the BK connected with negative

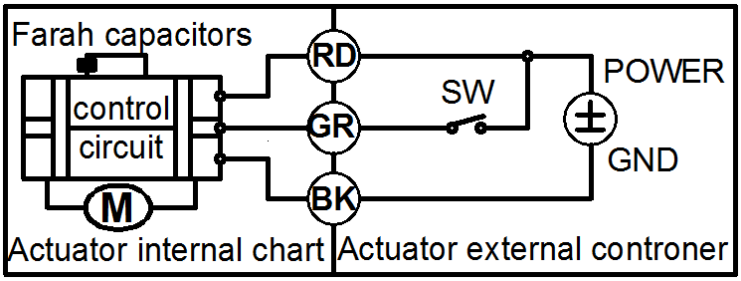
·When RD & SW connected, the valve closed, the actuator automatically power off after in place , remains fully closed position

·When GR & SW connected, the valve open, the actuator automatically power off after in place , remains fully open position.

* Suitable Working Voltage: DC5V, DC12V, DC24V

* Exceeding the working voltage is forbidden

CR3 05 Wiring Diagram (3 wires control – Power reset funtion)



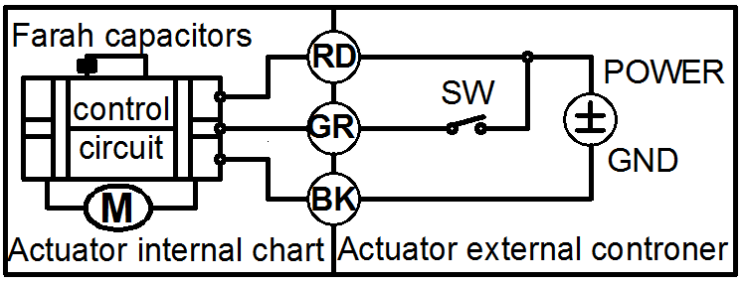
·RD& GR connect with positive, the BK connect with negative。

·SW CLOSED, the valve OPEN, the actuator automatically power off after in place

·SW OPEN, the valve CLOSED, the actuator automatically power off after in place.

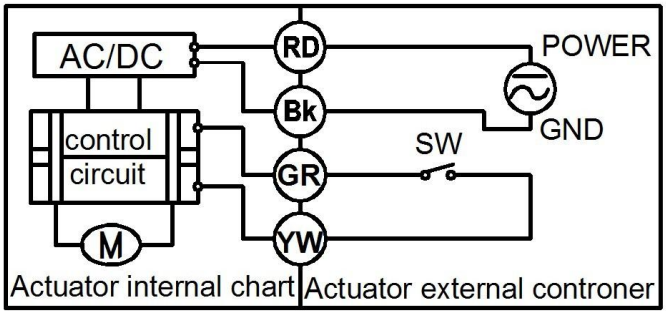
* Suitable Working Voltage: AC110-230V
* Exceeding the working voltage is forbidden

CR3 06 Wiring Diagram (3 wires control – Power reset funtion)



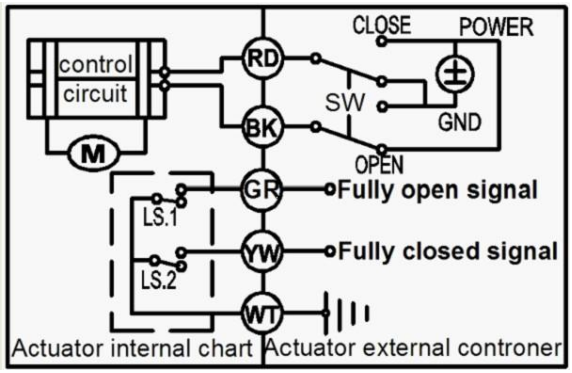
·RD& GR connect with positive, the BK connect with negative
·SW CLOSED, the valve close, the actuator automatically power off after in place
·SW OPEN, the valve open, the actuator automatically power off after in place.
* Suitable Working Voltage: AC/DC9-24V，AC/DC110V-230V
* Exceeding the working voltage is forbidden

CR4 01 Wiring Diagram (4 wires control)



1、RD & BK are connected to the power, GY& GR are connected to the controlled wiring.
2、When the SW is closed , the valve open
3、When the SW is open , the valve closed
*Suitable Working Voltage:**AC110V-230V**
*Exceeding the working voltage is forbidden
The control wiring with power DC5V/DC24V, when muitiple motorized valves are working in paralled, must put the same color control wiring together, otherwise the valve could working

CR5 01 Wiring diagram (with feedback signal)

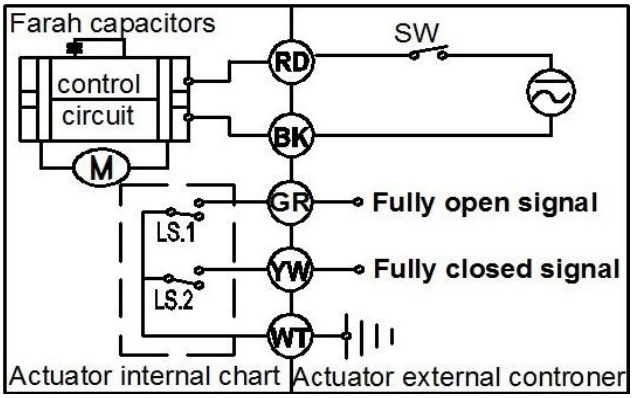


1.RD connect with positive, the BK connect with negative，the valve closed, the actuator automatically power off after in place .
2.BK connect with positive, the RD connect with negative，the valve open, the actuator automatically power off after in place .
3.GR & WT are connect when the valve open fully, YW & WT are connect when the valve closed fully

* Suitable Working Voltage:：DC5V, DC12V, DC24V

* Exceeding the working voltage is forbidden!

CR5 02 Wiring diagram (with feedback signal and Power reset funtion)



·When SW is closed , the valve open. the actuator automatically power off after in place

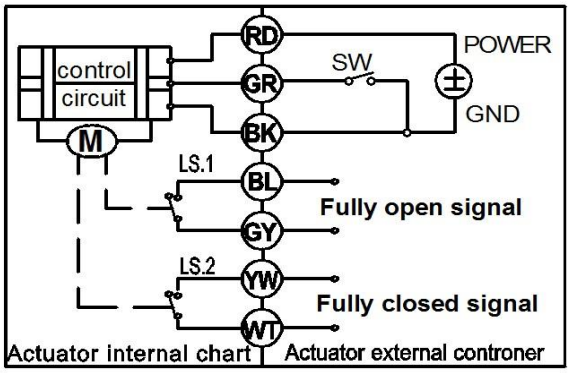
·When SW is open, the valve closed, the actuator automatically power off after in place

* GR & WT are connect when the valve open fully, YW & WT are connect when the valve closed fully

* Suitable Working Voltage: AC/DC9-35V，AC/DC110V-230V

* Exceeding the working voltage is forbidden

CR7 01 Wiring Diagram (7 wires control with feedback signal)



---RD connect with positive

---GR connect with SW and negative wiring

--- BK connect with negative wiring

---SW open. the valve open, and keeping fully open.

---SW closed. the valve closed, and keeping fully closed.

----BL & GY connect with the valve's fully open signal wiring

--- YW & WT connect with the valve's fully closed signal wiring.

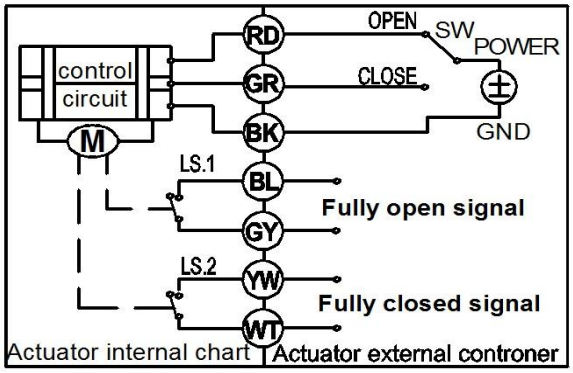
* Suitable Working Voltage: DC7-35V (wide input range voltage)

* Exceeding the working voltage is forbidden

※ Feedback with load ability：

① The Max. off voltage: DC36V AC220V ② The Max. off current: ≦0.4A

CR7 02 Wiring Diagram (7 wires control with feedback signal)



1.RD & GR connect with positive, the BK connect with negative

2. When RD & SW connected, the valve open, the actuator automatically power off after the valve fully open.
3. When GR & SW connected, the valve closed, the actuator automatically power off after the valve fully closed,.
4. BL & GY connect with the valve's fully open signal wiring
5. YW & WT connect with the valve's fully closed signal wiring

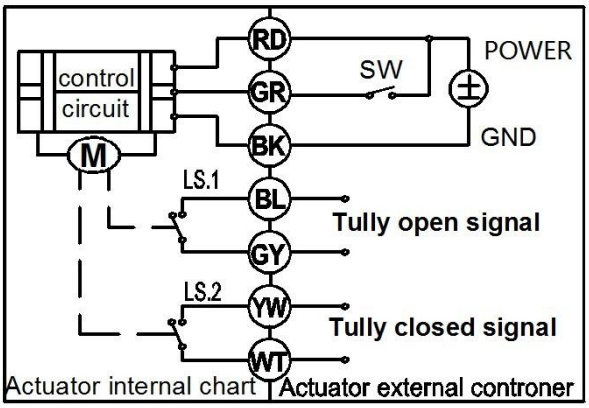
＊Suitable Working Voltage: DC5V, DC12V, DC24

＊Exceeding the working voltage is forbidden

※ Feedback with load ability：

① The Max. off voltage: DC36V AC220V　② The Max. off current: ≦0.4A

CR7 03 Wiring Diagram (7 wires control with feedback signal)



·RD& GR connect with positive, the BK connect with negative。

·SW CLOSED, the valve OPEN,　the actuator automatically power off after in place

·SW OPEN, the valve CLOSED,　the actuator automatically power off after in place.

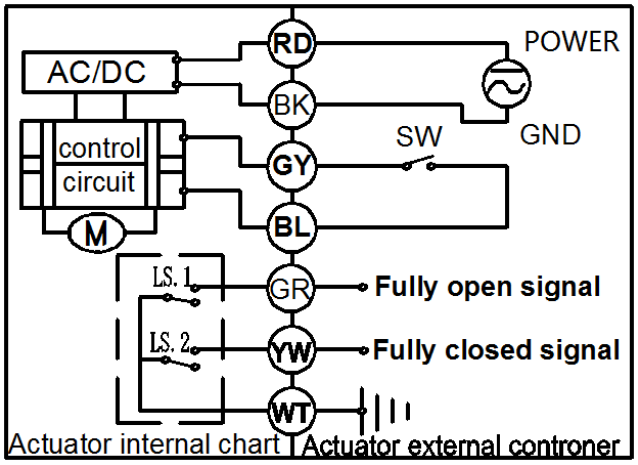
·BL & GY connect with the valve's fully open signal wiring

·YW & WT connect with the valve's fully closed signal wiring.

＊Suitable Working Voltage: AC/DC9-35V

＊Exceeding the working voltage is forbidden

CR7 04 Wiring Diagram (7 wires control with feedback signal)



·RD & BK are connected to the power, GR & BL are connected to the controlled wiring.

·When the SW is closed , the valve open

·When the SW is open , the valve closed

·GR & WT connect with the valve's fully open signal wiring

·YW & WT connect with the valve's fully closed signal wiring.

Suitable Working Voltage:：AC/DC110V-230V

＊Exceeding the working voltage is forbidden

Instruction For Manual Function

Manual override instructions:

In case of an electric supply failure, it is possible to operate the actuator manually:

1. Power must in off position when start the manual override.
2. Gently pull up the knob about 3mm, then revolve the knob around left and right to control the valve open or close.
3. When the red needle in the indicator pointing to S, means the valve is closed. When pointing to 0, means the valve is open.
4. After finish the manual override operation, must press down the knob, so that for the normal electric operation.