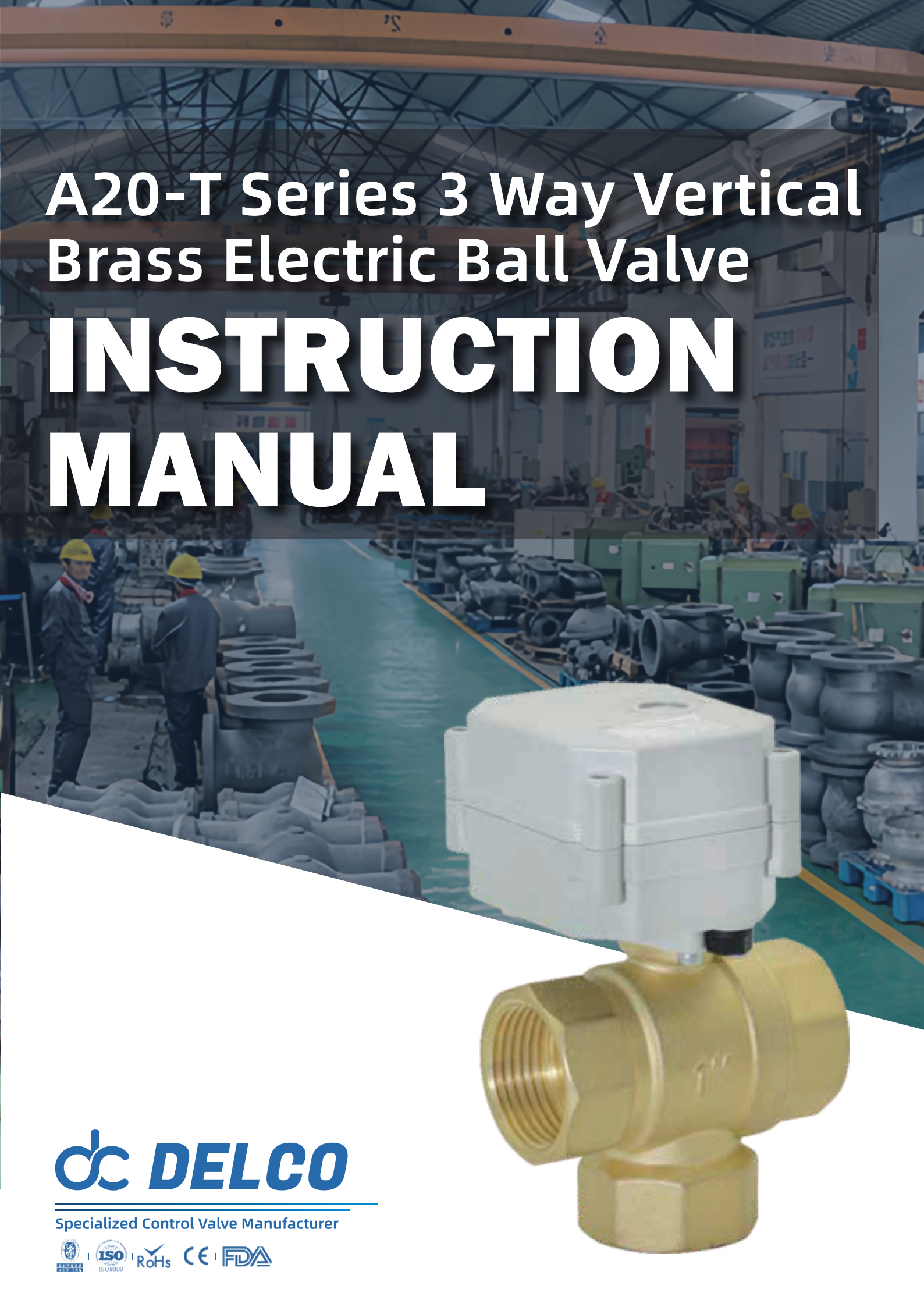
A20-T Series 3 Way Vertical Brass Electric Ball Valve

INSTRUCTION MANUAL



DELCO

Specialized Control Valve Manufacturer

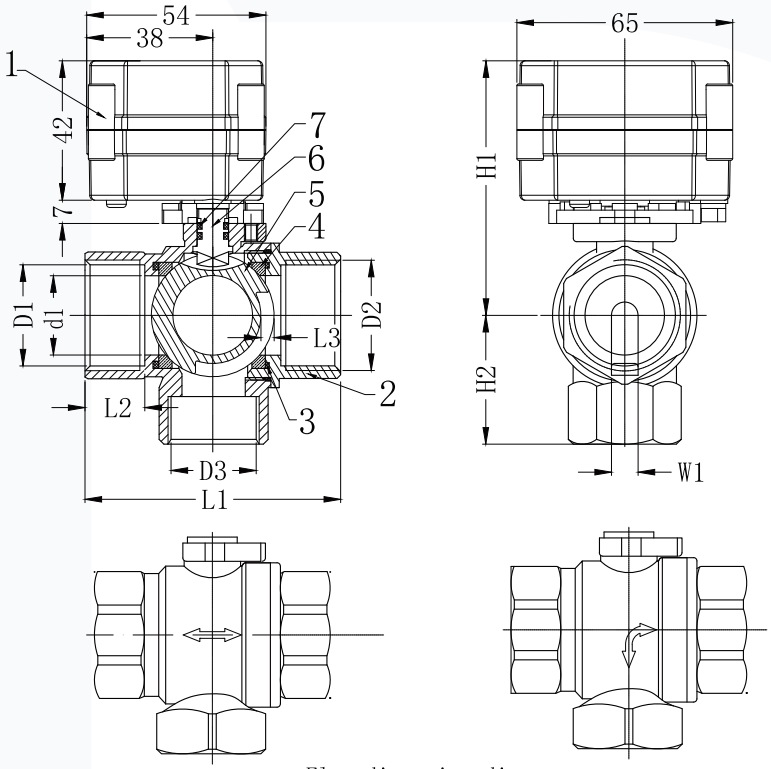
DELCO

A20-T Series 3 Way Verical Brass Electric Ball Valve

Introduction

The compact three-way vertical brass electric ball valve is a fluid control device with diverse functions, suitable for pipeline systems that require diversion, merging, or switching of flow directions. Adopting a vertical installation tee structure (T-shaped or L-shaped), the three ports are distributed vertically or at a specific angle to achieve flow direction switching, distribution, or mixing of the medium. The valve body and key components are made of brass (copper zinc alloy), which has good corrosion resistance, thermal conductivity, and mechanical strength, and is suitable for water, gas, and non corrosive liquids. Small size, fast response, corrosion resistance, and easy maintenance.

Main Parts Materials



Flow direction diagram

UNIT:mm

NO.	Name	Material
01	Actuator	PPO
02	Body & Cover	Brass
03	O-Ring	FKM
04	Sealing	PTFE
05	Ball	Stainless Steel
06	Stem	Brass
07	O-Ring	FKM

Dimension

DESCRIPTION	D1/D2/D3	d1±0.3	W1±0.2	L1±1	L2±1	L3±1	H1±1	H2
15-B3-C	1/2"	15	8	58	13	3	72	29.5
20-B3-C	3/4"	15	7	66	16	3	70.5	32.5
25-B3-C	1"	24	8	75	17	4	77	40

Technical Parameters

Product Size	NPT/BSP 1/2" 3/4" 1"(optional)
Maximum Working Pressure	1.0 MPa
Circulation Medium	Fluid，air
Working Voltage	DC5V、DC12V、DC24V、DC/AC9-24V、AC/DC110-230V
Working Diagram	CR201 CR202 CR301 CR302 CR303 CR304 CR305 CR306 CR401 CR501 CR701 CR702 CR703 CR704 CR705 CR706(Optional)
Working Current	≤500mA
Open/Close Time	≤5S
Life Time	70000 times (testing pressure is 0.4MPa, medium is water)
Valve Body Material	Brass
Actuator Material	PPO
Sealing Material	FKM & PTFE
Actuator Rotation	90°
Torque Force	3N.m
Cable Length	0.5m ,1.5m(Optional)
Environment Temperature	-15℃ ~ 50℃
Liquid Temperature	2℃ ~ 90℃
Manual Override	Yes No（Optional）
Open/Close Indicator	Yes No（Optional）
Protection Class	IP67

Actuator Model

A20-A
No indicator &
manual override

A20-B
With indicator &
manual override

A20-C
Indicator only

Naming Scheme For Electric Ball Valve

A100 T32 S2 C

Actuator model

A20
A100
A150
B150
E20(Battery power)

Control type

T : on/off type
M: Modulating type
S : Timer drain type
L : Lora wireless control

Valve size

DN8 ,DN10 ,DN15
DN20,DN25 ,DN32
DN40,DN50

Valve body channel

2 way
3 way

Valve material

B : Brass
S : Stainless steel
P : PVC or plastic
N: Nickel plated brass

Manual override & Indicator

A:No indicator &manual override
B:With indicator &manual override
C:Indicator only

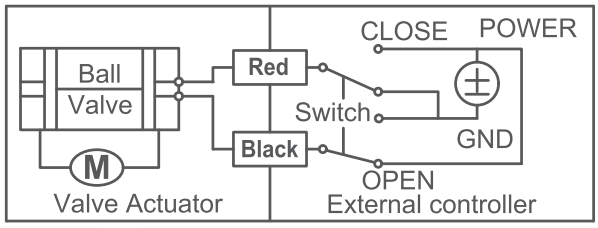
Manual Operation Instruction

- The manual function can only use in the power failure situation
- Lift the manual knob and confirm the direction of rotation. The valve is opened in the direction of “O" and closed in the direction of"S". Stop rotating after observing the indication mark in place.
- Press the handwheel after manual operation ,otherwise the gearwill be damaged

Manual Operation Instruction

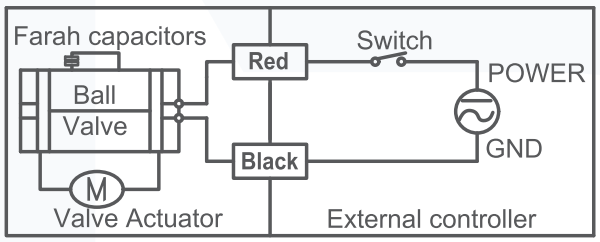
Wiring Diagram

CR 201 Wiring Diagram（2 Wires Control）



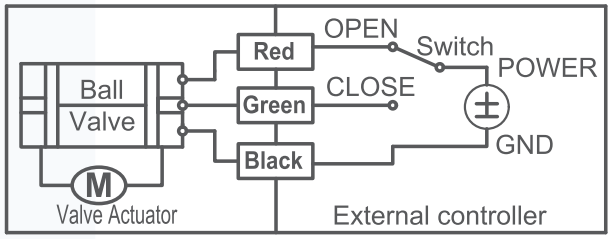
·Red connect with positive, the Black connect with negative, the valve closed, the actuator automatically power off after in place , the valve remains fully closed position
·Black connect with positive, the Red connect with negative, the valve open, the actuator automatically power off after in place, the valve remains fully open position
* Suitable Working Voltage: DC5V,DC12V,DC24V
* Exceeding the working voltage is forbidden

CR 202Wiring Diagram（2 Wires Control-Capacitors return in of the power is failure）



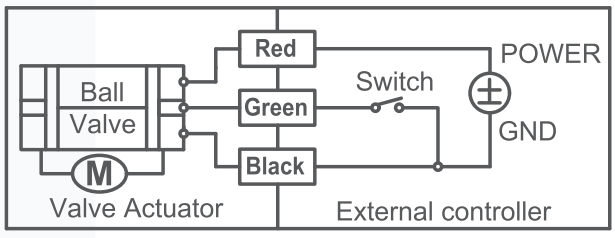
·When SW is closed , the valve OPEN. the actuator automatically power off after in place
·When SW is open, the valve CLOSED, the actuator automatically power off after in place
* Suitable Working Voltage: AC/DC9-24V AC/DC110-230V
* Exceeding the working voltage is forbidden

CR 301 Wiring Diagram（3 Wires Control）



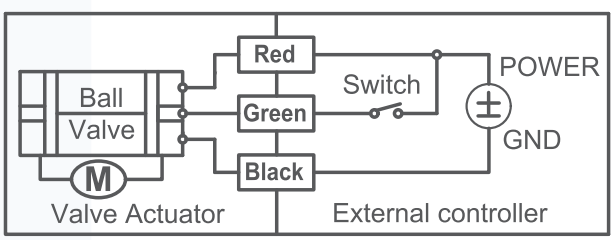
·Red & Green connect with positive, Black connect with negative
·When OPEN(Red) & SW connected , the valve OPEN, the actuator automatically power off after in place , valve remains fully open position
·When CLOSE(Green) & SW connected, the valve CLOSED, the actuator automatically power off after in place, valve remains fully closed position
* Suitable Working Voltage: DC5V,DC12V,DC24V
* Exceeding the working voltage is forbidden

CR 302 Wiring Diagram（3 Wires Control）



·Red connect with positive, the Black & Green 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: DC9-24V
* Exceeding the working voltage is forbidden

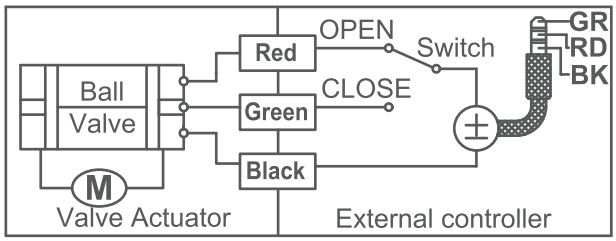
CR 303 Wiring Diagram（3 Wires Control）



·Red & Green connect with positive, the Black 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: DC12V,DC24V,AC/DC9-24V,AC/DC110-230V,AC/DC9-29V
* Exceeding the working voltage is forbidden

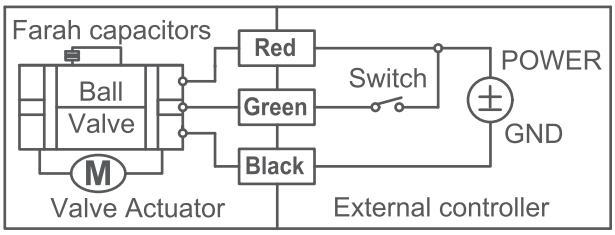
Wiring Diagram

CR 304 Wiring Diagram（3 Wires Control）



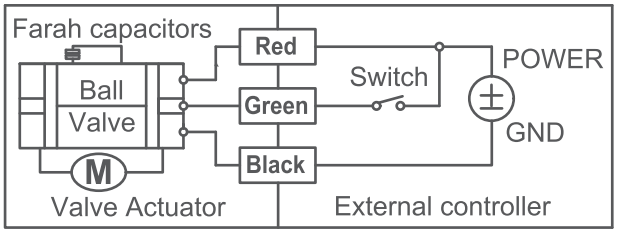
·Red & Green connected with positive, and the Black connected with negative
·When Red & SW connected, the valve closed, the actuator automatically power off after in place , remains fully closed position
·When Green & SW connected, the valve open, the actuator automatically power off after in place , remains fully open position
* Suitable Working Voltage: DC5V,DC12V, DC9-24V
* Exceeding the working voltage is forbidden

CR 305 Wiring Diagram（3 Wires Control-Capacitors return incase of the power is failure）



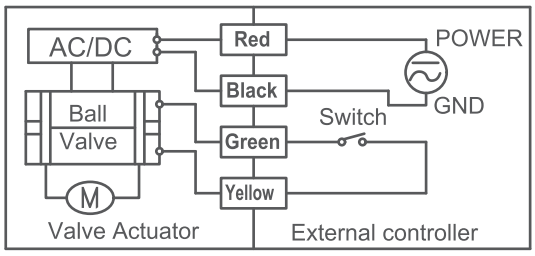
·Red & Green connect with positive, the Black connect with negative
·SW CLOSED, the valve OPEN, the actuator automatically power off after in place
·SW OPEN, the valve CLOSED, the actuator automatically power off after in place
When external power off, the valve CLOSED, the actuator automatically power off after in place
* Suitable Working Voltage: AC/DC9-24V,AC/DC110-230V
* Exceeding the working voltage is forbidden

CR 306 Wiring Diagram（3 Wires Control-Capacitiors return in case of the power is failure）



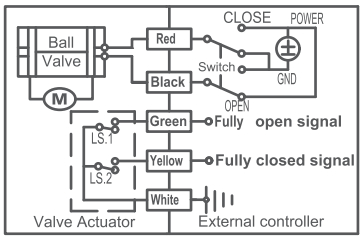
·Red & Green connect with positive, the Black connect with negative
·SW CLOSED, the valve OPEN, the actuator automatically power off after in place
·SW OPEN, the valve CLOSED, the actuator automatically power off after in place
When external power off, the valve OPEN, the actuator automatically power off after in place
* Suitable Working Voltage: AC/DC9-24V,AC/DC110-230V
* Exceeding the working voltage is forbidden

CR 401 Wiring Diagram（4 Wires Control）



·Red & Black are connected to the power, Green & Yellow are connected to the controlled wiring
·When the SW is closed , the valve open
·When the SW is OPEN , the valve CLOSED Suitable Working Voltage:AC/DC110V-230V
Exceeding the working voltage is forbidden
The control wiring with power DC5V , when muitiple motorized valves are working in paralled , must put the same color control wiring together, otherwise the valve could not working normally

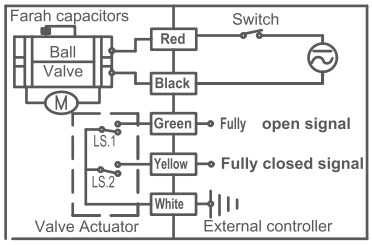
CR 501 Wiring Diagram（5 Wires Control with feedback signal）



·Red connect with positive, the Black connect with negative, the valve closed, the actuator automatically power off after in place
·Black connect with positive, the Red connect with negative, the valve open, the actuator automatically power off after in place
·Green & White connect with the valve's fully open signal wiring
·Yellow & White connect with the valve's fully closed signal wiring
Suitable Working Voltage:DC5V,DC12V,DC24V
Exceeding the working voltage is forbidden

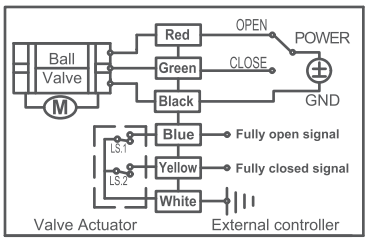
Wiring Diagram

CR 502 Wiring Diagram（5 Wires Control-Capacitors return in case of the power is fallure & feedback signal）



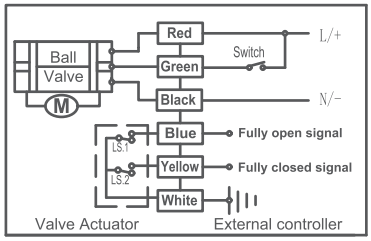
·When SW is closed , the valve OPEN. the actuator automatically power off after in place
·When SW is open, the valve CLOSED, the actuator automatically power off after in place
·Green & White connect with the valve's fully open signal wiring
·Yellow & White connect with the valve's fully closed signal wiring
* Suitable Working Voltage: AC/DC9-24V, AC/DC110V-230V
* Exceeding the working voltage is forbidden

CR 602 Wiring Diagram（6 Wires Control with feedback signal）



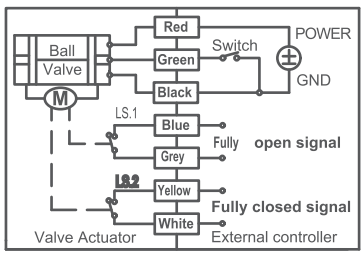
·Red & Green connect with positive, the Black connect with negative
·When Red & SW connected, the valve OPEN, the actuator automatically power off after the valve fully open
·When Green & SW connected, the valve CLOSED, the actuator automatically power off after the valve fully closed
·Blue & White connect with the valve's fully open signal wiring
·Yellow & White connect with the valve's fully closed signal wiring
* Suitable Working Voltage: ,DC12V,DC24V AC24V DC12-24V
* Exceeding the working voltage is forbidden

CR 603 Wiring Diagram（6 Wires Control with feedback signal）



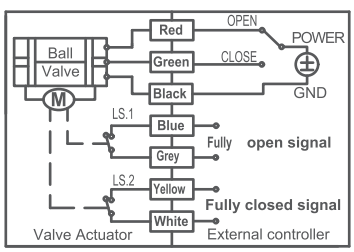
Red & Green connect with positive, the Black connect with negative
·SW CLOSED, the valve OPEN, the actuator automatically power off after in place
·SW OPEN, the valve CLOSED, the actuator automatically power off after in place
·Blue & White connect with the valve's fully open signal wiring
·Yellow & White connect with the valve's fully closed signal wiring
* Suitable Working Voltage: DC12V, DC24V
* Exceeding the working voltage is forbidden
* Feedback signal load capacity: 1, voltage: DC0-35V, 2, the maximum current is 0.4A.

CR 701 Wiring Diagram（7 Wires Control with feedback signal）



·Red connect with positive
·Green connect with SW and negative wiring
·Black connect with negative wiring
.When SW close. the valve OPEN, and keeping fully open
.When SW open. the valve CLOSED, and keeping fully closed
.Blue & Grey connect with the valve's fully open signal wiring
.Yellow & White connect with the valve's fully closed signal wiring
* Suitable Working Voltage: DC9-24V
* Exceeding the working voltage is forbidden
* Feedback with load ability:
①The Max. off voltage: DC36V AC220V

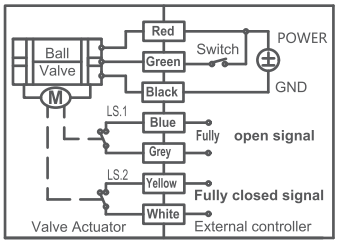
CR 702 Wiring Diagram（7 Wires Control with feedback signal）



·Red & Green connect with positive, the Black connect with negative
·When Red & SW connected, the valve OPEN, the actuator automatically power off after the valve fully open
·When Green & SW connected, the valve CLOSED, the actuator automatically power off after the valve fully closed
·Blue & Grey connect with the valve's fully open signal wiring
·Yellow & White connect with the valve's fully closed signal wiring
* Suitable Working Voltage: DC5V,DC12V,DC24V
* Exceeding the working voltage is forbidden
* Feedback with load ability:
① The Max. off voltage: DC36V AC220V
② The Max. off current: ≤0.4A

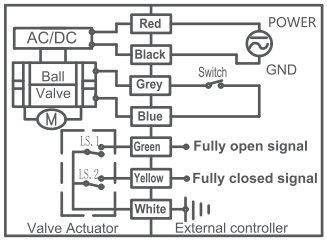
Wiring Diagram

CR 703 Wiring Diagram（7 Wires Control with feedback signal）



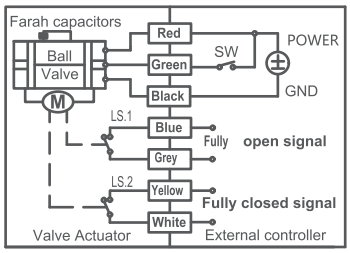
·Red & Green connect with positive, the Black connect with negative
·SW CLOSED, the valve OPEN, the actuator automatically power off after in place
·SW OPEN, the valve CLOSED, the actuator automatically power off after in place
·Blue & Grey connect with the valve' s fully open signal wiring
·Yellow & White connect with the valve' s fully closed signal wiring
* Suitable Working Voltage: DC12V,DC24V,AC/DC9-24V,AC110-230V
* Exceeding the working voltage is forbidden

CR704 Wiring Diagram（7 Wires Control with feedback signal）



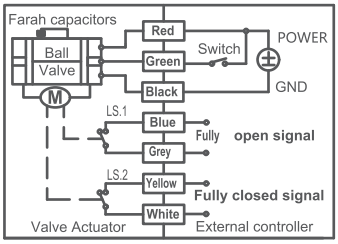
·Red & Black are connected to the power, Blue & Grey are connected to the controlled wiring
·When the SW is closed , the valve open
·When the SW is open , the valve closed
·Green & White connect with the valve's fully OPEN signal wiring
·Yellow & White connect with the valve's fully CLOSED signal wiring
Suitable Working Voltage: AC/DC110V-230V
Exceeding the working voltage is forbidden

CR705 Wiring Diagram（7 Wires Control-Capacitors return in case of the power is failure &feedback signal）



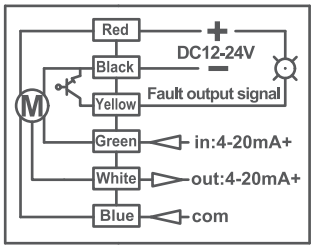
·Red & Green connect with positive, the Black connect with negative
·SW CLOSED, the valve OPEN, the actuator automatically power off after in place
·SW OPEN, the valve CLOSED, the actuator automatically power off after in place
·When external power off, the valve **closed**, the actuator automatically power off after in place
·Blue & Grey connect with the valve's fully open signal wiring
·Yellow & White connect with the valve's fully closed signal wiring
* Suitable Working Voltage: AC/DC9-24V,AC/DC110-230V
* Exceeding the working voltage is forbidden

CR706 Wiring Diagram（7 Wires Control Capacitors return in case of the power is failure & feedback signal）



·Red & Green connect with positive, the Black 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
·When external power off, the valve **open**, the actuator automatically power off after in place
·Blue & Grey connect with the valve's fully open signal wiring
·Yellow & White connect with the valve's fully closed signal wiring
* Suitable Working Voltage: AC/DC9-24V,AC/DC110-230V
* Exceeding the working voltage is forbidden

A150 SERIES MODULATING VALVE WIRE DIAGRAM



·Red connect +, Black -.
·Green connect input signal +(4-20mA, 0-5V, 0-10V) , Black connect input signal-.
·Yellow connect err output signal.Yellow & Red are disconnected when there is err.
·White connect 4-20mA output .

Seeking For Global Distributors

DELCO

Specialized Control Valve Manufacturer

DELCO VALVE CO.LTD

Phone: +86-159 8960 2972

Website:www.delcofluid.com/www.delcovalves.com / www.delcovalve.ru

E-mail:sales@delcofluid.com

Address:Building 8A#, Tiansheng Industrial Park, Wanjiang Street, Dongguan,China