

# A150-T Series 3 Way SS304 Electric Ball Valve

# INSTRUCTION MANUAL



**dc DELCO**

Specialized Control Valve Manufacturer

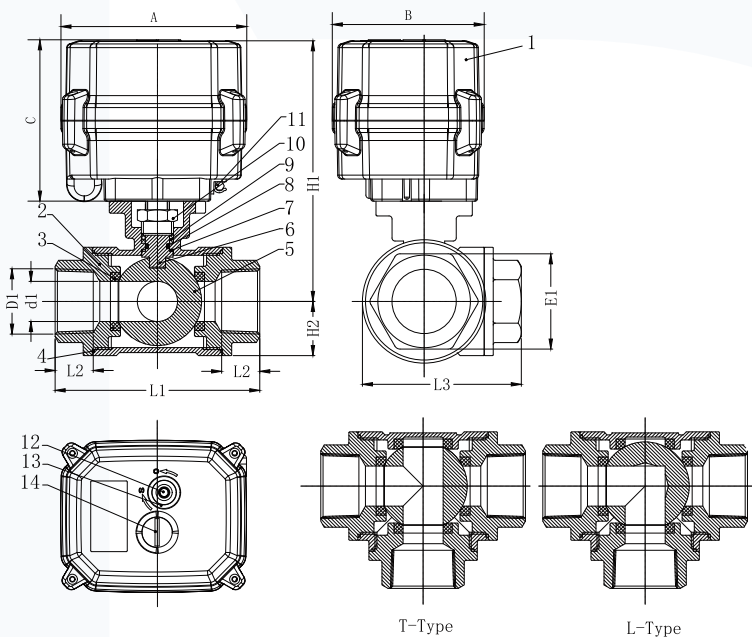


## Introduction

The compact three-way electric actuator is made using advanced German technology, with excellent performance such as fine and smooth operation, small size and light weight, maintenance free, and strong corrosion resistance. It can be used in narrow places. The product is widely used in building automation, water conservancy, papermaking, electricity, chemical and other automation control systems. The shell is small and smooth, with a small volume, light weight, and simple wiring, making it beautiful, easy to move, and maintain; Low power loss rate can significantly save costs.

## Main Parts Materials

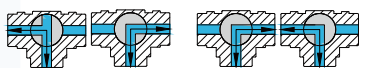
UNIT:mm



NO.	Name	Material
01	Actuator	PPO
02	Body & Cover	Stainless steel
03	Sealing	PTFE
04	Sealing	PTFE
05	Ball	Stainless Steel
06	Stem	Stainless Steel
07	Stem Gasket	PTFE
08	Oil-Seal	FKM
09	Packing	PTFE
10	Packing Gland	Stainless Steel
11	Hexagon Wrench	Stainless Steel
12	Manual Shaft	Stainless Steel
13	Oil-Seal	NBR
14	Indicator	PC

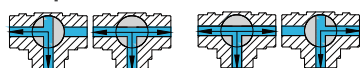
## Flow Direction

### L port

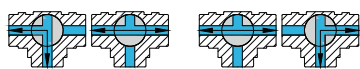


Flow Direction A Flow Direction B

### T port



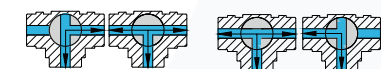
Flow Direction A Flow Direction B



Flow Direction E Flow Direction F



Flow Direction C Flow Direction D



Flow Direction G Flow Direction H

## Dimension

DESCRIPTION	D1	d1±0.3	L1±1	L2±1	E1±0.5	H1±1	H2	L3
15-S3-B	1/2"	12	71	18	25	118	18	53
20-S3-B	3/4"	15	80	20	31	122.4	21	60
25-S3-B	1"	18	87	20	38	131	23.5	68

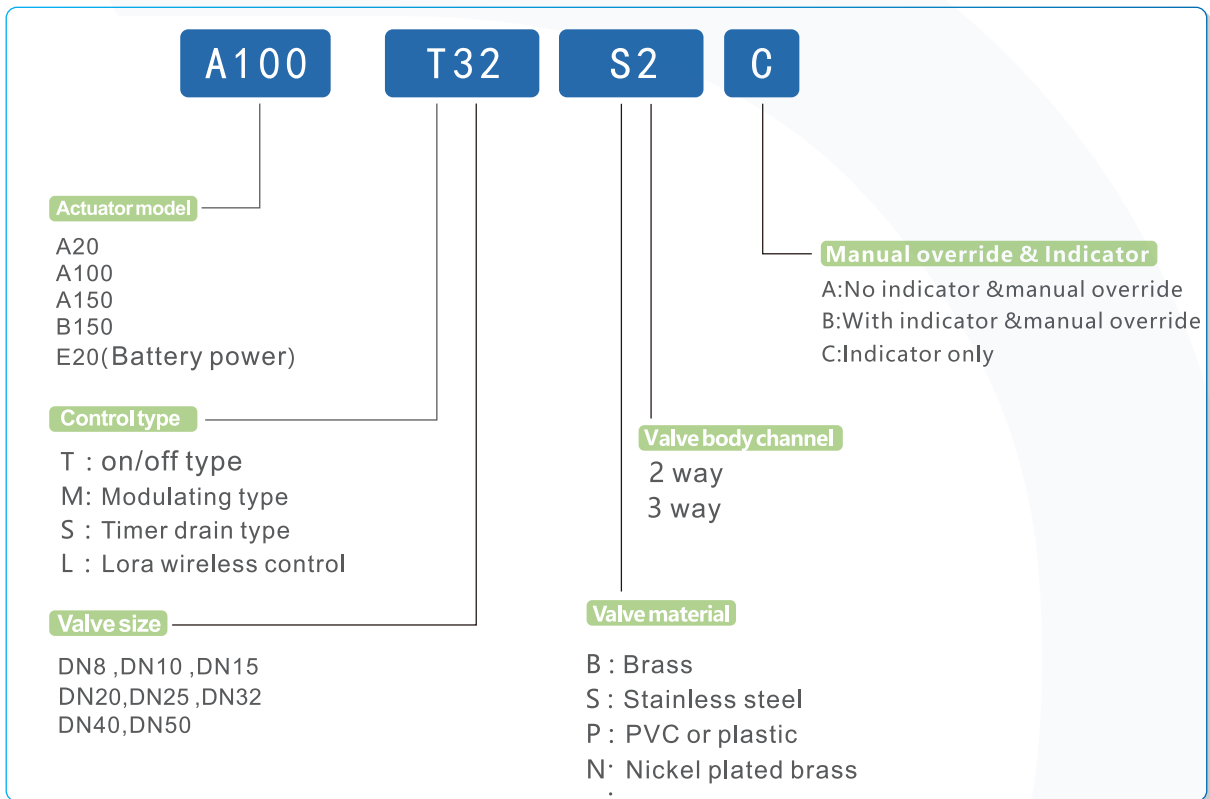
**Technical Parameters**

Valve Size	NPT/BSP 1/2" 3/4" 1" (Optional)
Connection Standard	1.0MPa
Output Axis Specification	Fluid, air
Maximum Working Pressure	1.0MPa
Circulation Medium	Fluid, air
Rated Voltage	DC5V、DC12V、DC24V、DC/AC9-24V、AC/DC110-230V
Wiring Diagram	CR201 CR202 CR301 CR303 CR306 CR501 CR502 CR702 CR703 CR706(Optional)
Working Current	≤1.5A
Open/Close Time	≤12S
Life Time	70000 times (testing pressure is 0.4MPa, medium is water)
Valve Body Material	SS304 SS316(Optional)
Actuator Material	PPO
Sealing Material	PTFE
Actuator Rotation	90°
Torque Force	15 N.m
Cable Length	0.5m ,1.5m(Optional)
Environment Temperature	-15°C ~ 50°C
Liquid Temperature	2°C ~ 90°C
Manual Operation	Yes
Open/Close Indicator	Yes
Protection Class	IP67

## Actuator Model



## Naming Scheme For Electric Ball Valve



## Manual Operation Instruction

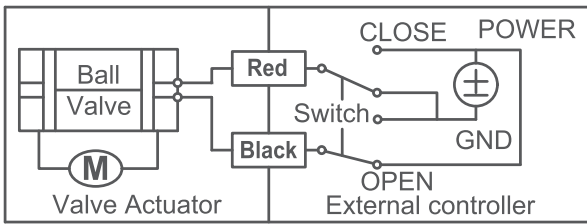
- The manual function can only use in the power failure situation
- Lift the manual knob and confirm the direction of rotation. The valve is opened in the direction of "O" and closed in the direction of "S". Stop rotating after observing the indication mark in place.
- Press the handwheel after manual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



Manual Operation Instruction

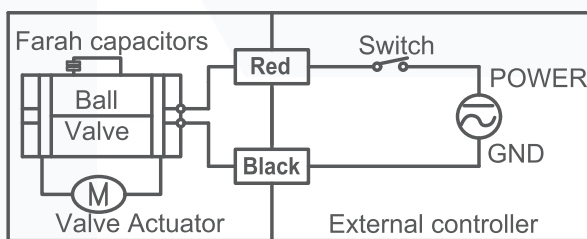
## Wiring Diagram

### CR 201 Wiring Diagram ( 2 Wires Control )



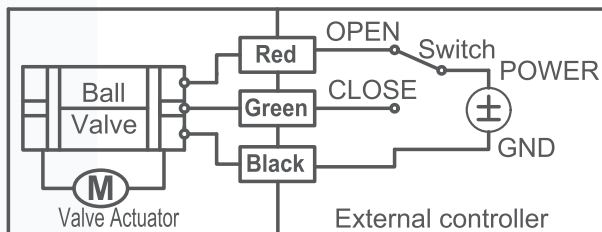
- Red connect with positive, the Black connect with negative, the valve closed, the actuator automatically power off after in place , the valve remains fully closed position
- Black connect with positive, the Red connect with negative, the valve open, the actuator automatically power off after in place, 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 )



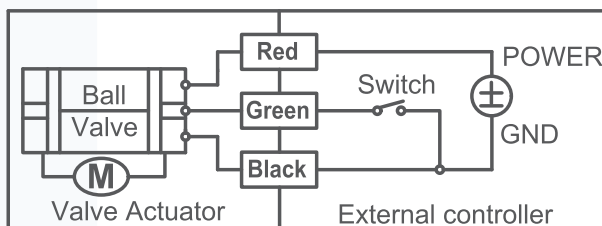
- When SW is closed , the valve OPEN. the actuator automatically power off after in place
- When SW is open, the valve CLOSED, the actuator automatically power off after in place
- \* Suitable Working Voltage: AC/DC9-24V AC/DC110-230V
- \* Exceeding the working voltage is forbidden

### CR 301 Wiring Diagram ( 3 Wires Control )



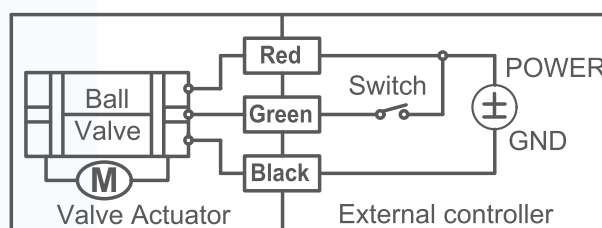
- Red & Green connect with positive, Black connect with negative
- When OPEN( Red ) & SW connected , the valve OPEN, the actuator automatically power off after in place , valve remains fully open position
- When CLOSE(Green ) & SW connected, the valve CLOSED, the actuator automatically power off after 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

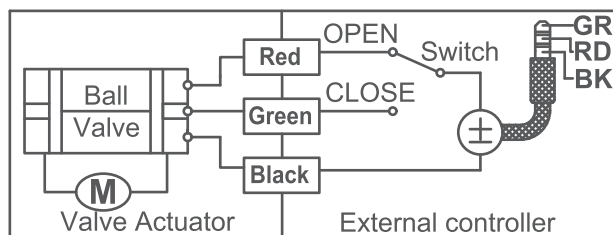
### CR 303 Wiring Diagram ( 3 Wires Control )



- 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

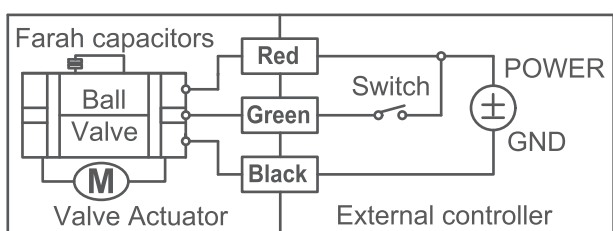
## Wiring Diagram

### CR 304 Wiring Diagram ( 3 Wires Control )



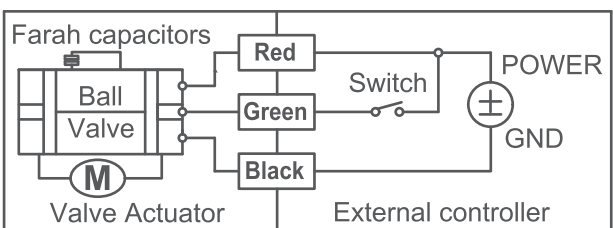
- Red & Green connected with positive, and the Black connected with negative
- When Red & SW connected, the valve closed, the actuator automatically power off after in place , remains fully closed position
- When Green & SW connected, the valve open, the actuator automatically power off after in place , 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 )



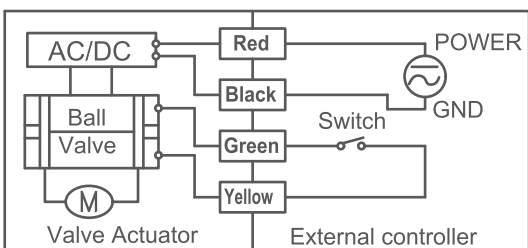
- Red & Green connect with positive, the Black connect with negative
- SW CLOSED, the valve OPEN, the actuator automatically power off after in place
- SW OPEN, the valve CLOSED, the actuator automatically power off after in place
- When external power off, the valve CLOSED, the actuator automatically 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-Capacitors return in case of the power is failure )



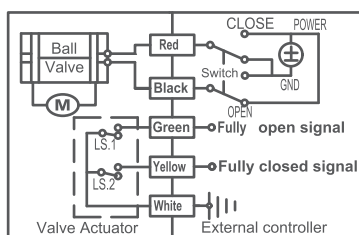
- Red & Green connect with positive, the Black connect with negative
- SW CLOSED, the valve OPEN, the actuator automatically power off after in place
- SW OPEN, the valve CLOSED, the actuator automatically power off after in place
- When external power off, the valve OPEN, the actuator automatically 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 multiple motorized valves are working in paralled , must put the same color control wiring together, otherwise the valve could not working normally

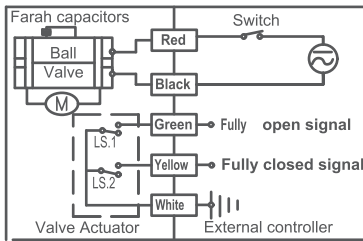
### CR 501 Wiring Diagram ( 5 Wires Control with feedback signal )



- 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

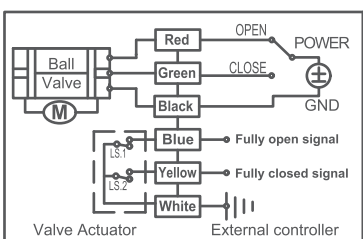
## Wiring Diagram

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



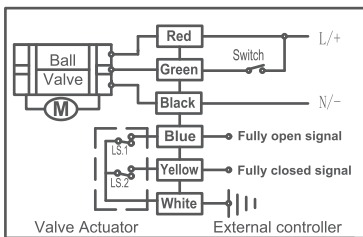
- When SW is closed , the valve OPEN. the actuator automatically power off after in place
- When SW is open, the valve CLOSED, the actuator automatically power off after in place
- Green & White connect with the valve's fully open signal wiring
- Yellow & White connect with the valve's fully closed signal 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 )



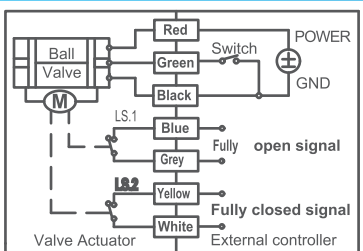
- Red & Green connect with positive, the Black connect with negative
- When Red & SW connected, the valve OPEN, the actuator automatically power off after the valve fully open
- When Green & SW connected, the valve CLOSED, the actuator automatically power off after the valve fully closed
- Blue & White 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 )



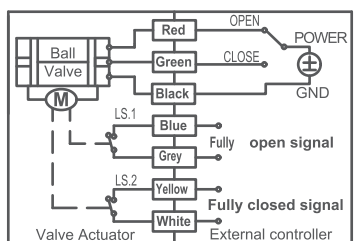
- Red & Green connect with positive, the Black connect with negative
- SW CLOSED, the valve OPEN, the actuator automatically power off after in place
- SW OPEN, the valve CLOSED, the actuator automatically power off after in place
- Blue & White connect with the valve's fully open signal wiring
- Yellow & 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

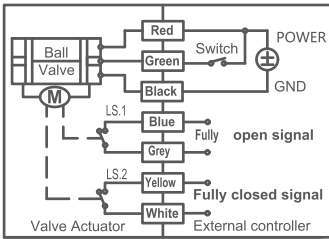
### CR 702 Wiring Diagram ( 7 Wires Control with feedback signal )



- 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

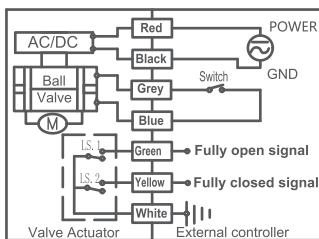
## Wiring Diagram

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



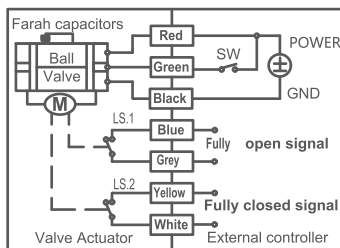
- Red & Green connect with positive, the Black connect with negative
- SW CLOSED, the valve OPEN, the actuator automatically power off after in place
- SW OPEN, the valve CLOSED, the actuator automatically power off after in place
- Blue & Grey connect with the valve' s fully open signal wiring
- Yellow & 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 )



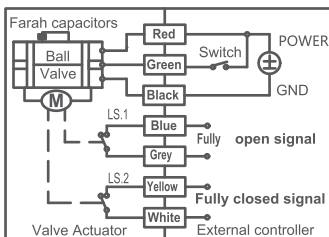
- Red & Black are connected to the power, Blue & Grey are connected to the controlled wiring
- When the SW is closed , the valve open
- When the SW is open , the valve closed
- Green & White connect with the valve's fully OPEN signal wiring
- Yellow & White connect with the valve's fully CLOSED signal 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 )



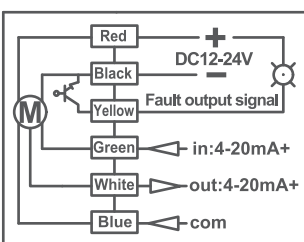
- Red & Green connect with positive, the Black connect with negative
- SW CLOSED, the valve OPEN, the actuator automatically power off after in place
- SW OPEN, the valve CLOSED, the actuator automatically power off after in place
- When external power off, the valve **closed**, the actuator automatically 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



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