



## STANDARDS

- NEMA 4, 4X
- Rated voltage: AC/DC95-265V, AC/DC24V, DC24-12V, 110VAC, 230VAC, 12VDC/VAC
- Rate torque: 110N.m
- Running time: about 10 seconds
- Charging time: 5 minutes

# J Flow Controls **JFE-C110 Series** On/Off with LED Display

## FEATURES & BENEFITS

- 1.3" OLED screen, no visual dead angle, bright, energy saving and eco-friendly
- Ideal for 2-way, 3-way ball valves and butterfly valves
- Adopted high-performance synchronous motor
- Hex wrench manual override
- Open and close indicator

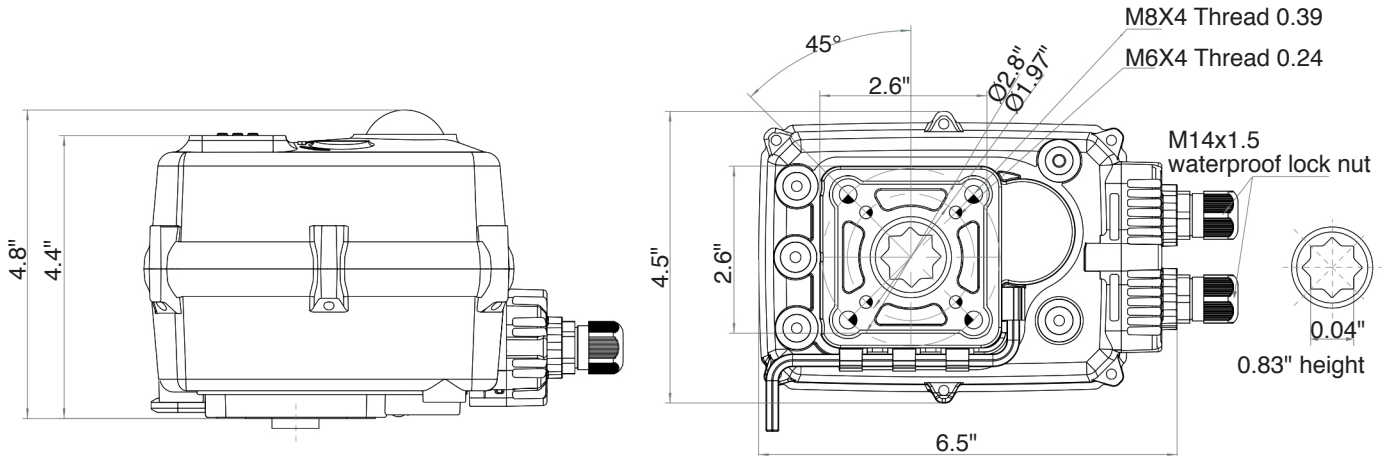
## JFE-C110 Series On/Off with LED Display

### TECHNICAL DATA

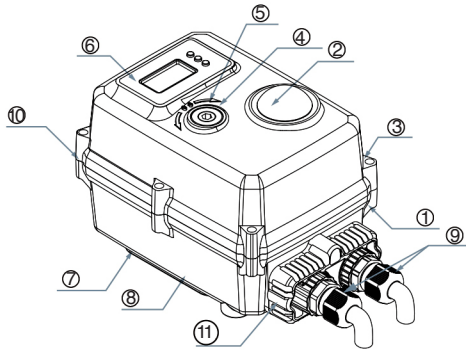
<b>Electrical data</b>	Rated voltage	AC230V50/60HZ		AC/DC24V	
	Rated voltage range	AC95-265V/DC100-300V		AC18-26V/DC22-28V	
	Power consumption	30W@running 3.9W@holding		28W@running 2.10W@holding	
	Peak current	0.26A@.52A@KT	0.26A@5ms@AC230V	2.50A@5ms@DC24V	
		0.52A@1.10A@KT	0.52A@5ms@AC110V	4.50A@KT@5ms@DC24V	
	Fuse	2A		5A/10A@KT	
Connecting cable	Cable: 9P-5.08-500V x (0.5-1.5)mm <sup>2</sup>				
<b>Functional data</b>	Rated torque	110Nm@rated voltage			
	Angle of rotation	90±2°			
	Max angle of rotation	330±5°			
	Manual operation	Matching hexagon wrench, using at power cut			
	Running time	About 10s (per 90°)			
	Operating mode	S3-70% (loading ≤85% rated torque)			
	Sound power level	Max 65dB(A)			
	Position indicator	Mechanical and screen			
<b>Working conditions</b>	Electricity safety level	I Type (ground protection)	III Type (ground protection)		
	Inflaming retarding level	V0 UL94 test method			
	Enclosure	IP67 As per EN60529/GB4208-2008 (all directions)			
		F type can add dehumidifying heater			
	Insulation resistance	100M Ω / 1000VDC	100M Ω / 500VDC		
	Withstand voltage	1500VAC@1Min	500VAC@1Min		
	Medium temperature	≤80° can install with actuator directly			
		>80° need to install bracket or heat radiation stand			
	Working environment	Indoor or outdoor; if exposed to the rain or sunshine			
		Need to install protective device for the actuator			
	Explosion-proof level	! Not explosion proof products. Do not use in flammable & explosive environments			
	Ambient temperature	-4°F to 140°F			
	Non-operation temp	≤-40°F or ≥176°F			
	Ambient humidity	5-95% RH non-condensing			
	Shock resistance	≤300m/s <sup>2</sup>			
	Vibration	10 to 55 Hz, 1.5 mm double amplitude			
	Installation notes	360° any angle. The need for manual operation or the wiring space			
	Maintenance	Free maintenance			
Certification	CE				
<b>Dimensions/weight</b>	Dimensions	See dimensions			
	Connection standard	ISO5211 F05, F07			
	Output axis specification	Female octagonal			
	Hole deepness	≤0.79" (Female octagonal)			
	Weight	ABS material 4.9 lbs			

# JFE-C110 Series On/Off with LED Display

## DIMENSIONS

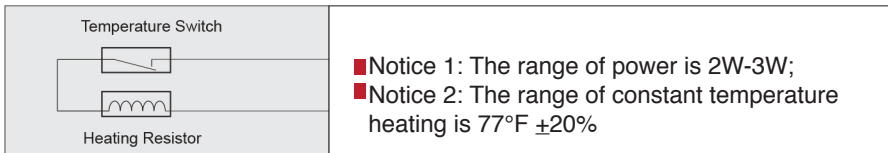


## PARTS



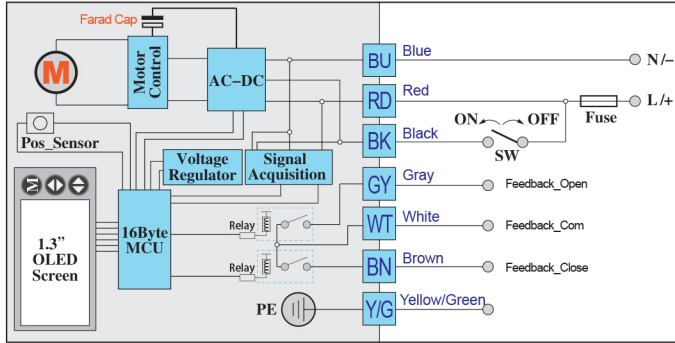
No	Parts Name	Materials	No	Parts Name	Materials
1	Actuator	ABS	7	Wrench fixed	ABS
2	Indicator	TransparentAS	8	Hexagon wrench	Tool steel
3	Screwx4	304	9	Waterproof cable connector	NiLon
4	Manual shaft	304	10	Seal part between up and down cover	NBR
5	Oil seal	NBR	11	Terminal cover	ABS
6	Label	PVC			

## ANTI-CONDENSATION HEATER (ACCESSORY)



## WIRING DIAGRAMS

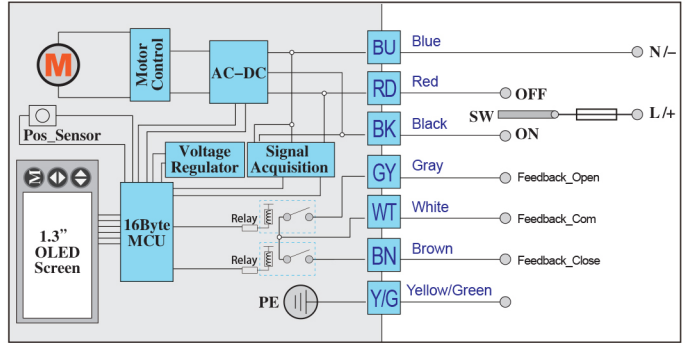
### BD3J/KT32J



Control instructions: [ 7-core ]

- If SW is disconnected, the actuator will drive valve close clockwise ↻. When the valve is closed completely, **WT** is connected with **BN**, send signal of full close.
- If SW is connected, the actuator will drive valve open anticlockwise ↻. When the valve is open completely, **WT** is connected with **GY**, send signal of full open.
- Note 1: **WT** is not connected with **GY** **BN**, when the actuator is operating.
- Note 2: After power cut, the feedback and fault signal will disappear, **WT** is not connected with **GY** and **BN**.

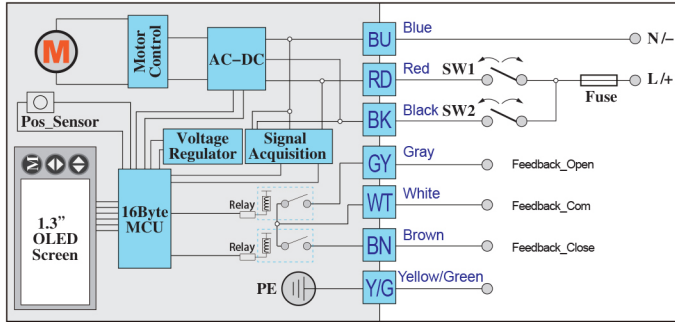
### B3J



Control instructions: [ 7-core ]

- SW is connected with **RD**, the actuator will rotate clockwise ↻. When the valve is closed, **WT** is connect with **BN**, send signal of full close.
- SW is connected with **BK**, the actuator will rotate anticlockwise ↻. When the valve is open, **WT** is connect with **GY**, send signal of full open.
- Note 1: **WT** is not connected with **GY** and **BN**, when the actuator is operating.
- Note 2: After power cut, the feedback and fault signal will disappear, **WT** is not connected with **GY** and **BN**.

### B33J



Control instructions: [ 7-core ]

SW1	SW2	Flow direction	Feedback signal
connect ↻	disconnect ↻	0°	<b>WT</b> connect with <b>BN</b>
disconnect ↻	connect ↻	90°	<b>WT</b> connect with <b>GY</b>
connect ↻	connect ↻	180°(could be free set by menu)	<b>WT</b> connect with <b>GY</b> <b>BN</b>

- Note 1: **WT** is not connected with **GY** and **BN**, when the actuator is operating.
- Note 2: After power cut, the feedback and fault signal will disappear, **WT** is not connected with **GY** and **BN**.

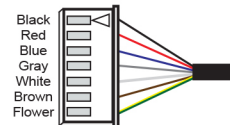
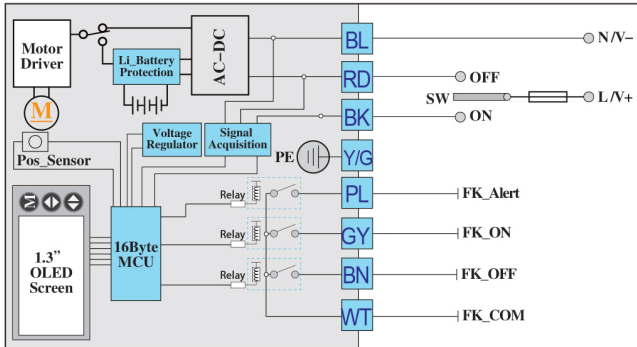


Figure 1 (7wiring diagram)

## WIRING DIAGRAMS

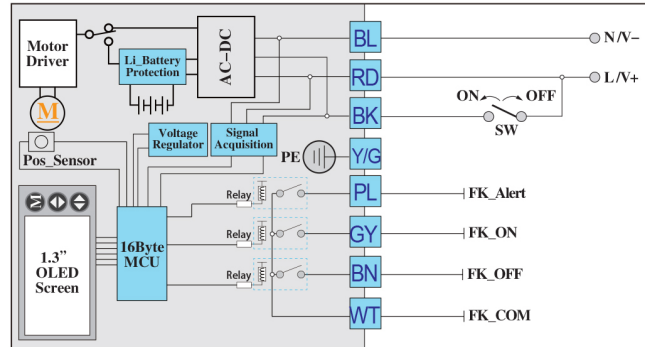
### B3JA (Alert)



#### Control instructions:

- SW is connected with **RD**, the actuator will rotate clockwise. When the valve is closed, **WT** is connect with **BN**, giving signal of closing.
- SW is connected with **BK**, the actuator will rotate anticlockwise. When the valve is open, **WT** is connect with **GY**, giving signal of opening.
- Notice 1: **WT** is not connected with **BN** and **GY**, when the actuator is rotating.
- Notice 2: After power cut, the feedback and fault signal will disappear, **WT** is not connected with **BN** and **GY**.
- When actuator is stuck or switch fails to arrive by other faults, **PL** connect with **WT**, send alarm signal.

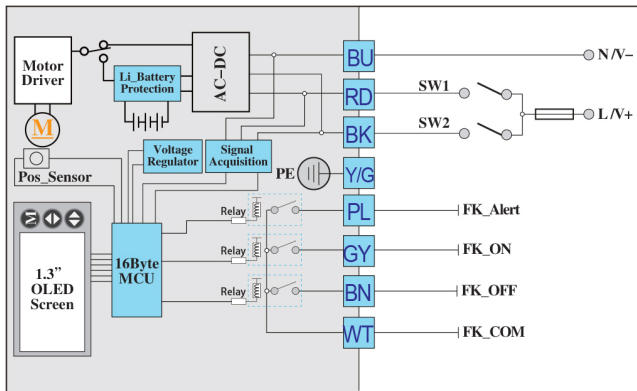
### BD3JA (Alert)



#### Control instructions:

- If SW is disconnected; the actuator will drive valve close clockwise. When the valve is closed completely, **WT** is connected with **BN**, giving signal of closing.
- If SW is connected, the actuator will drive valve open anticlockwise. When the valve is open completely, **WT** is connected with **GY**, giving signal of opening.
- Notice 1: **WT** not connected with **BN** and **GY**, when the actuator is running.
- Notice 2: After power cut, the feedback and fault signal will disappear, **WT** is not connected with **BN** and **GY**.
- When actuator is stuck or switch fails to arrive by other faults, **PL** connect with **WT**, send alarm signal.

### B33JA (Alert)



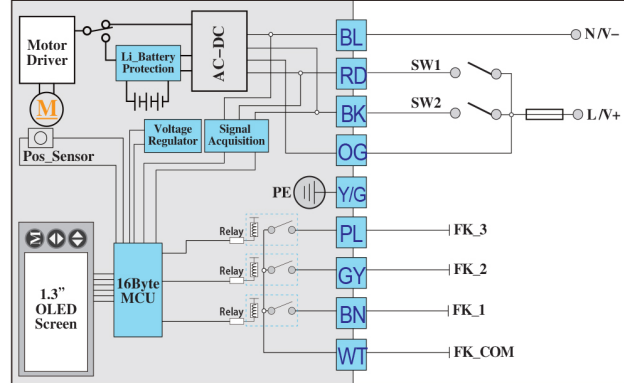
#### Control instructions:

SW1	SW2	Flow direction	Feedback signal
connect ↗	disconnect ↖	0°	<b>WT</b> connect with <b>BN</b>
disconnect ↖	connect ↗	90°	<b>WT</b> connect with <b>GY</b>
connect ↗	connect ↗	180°(could be free set by menu)	<b>WT</b> connect with <b>GY</b> and <b>BN</b>
Alarm single			<b>WT</b> connect with <b>PL</b>

#### Control instructions:

- Note 1: **WT** is not connected with **PL**, **GY** and **BN**, when the actuator is running.
- Note 2: When actuator was stuck or other faults, which lead valve unable to full-open or full-close, **WT** connect with **PL**, send alarm signal.
- Note 3: KT series. After power cut, the feedback and fault signal will disappear, **WT** is not connected with **GY** and **BN**.
- Note 4: 180° is the third position, whose value could be set by menu.
- Note 5: When SW1, SW2 are both disconnect, it means no control signal, factory default is valve-off command.

### B43JA (Alert)



#### Control instructions:

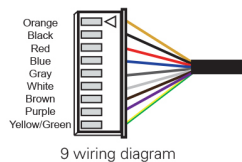
SW1	SW2	Control instructions	Feedback signal
disconnect ↖	disconnect ↖	Position A	<b>WT</b> connect with <b>BN</b>
disconnect ↖	connect ↗	Position B	<b>WT</b> connect with <b>GY</b>
connect ↗	disconnect ↖	Position C	<b>WT</b> connect with <b>GY</b> and <b>BN</b>
connect ↗	connect ↗	Position D	<b>WT</b> connect with <b>PL</b>
Alarm single			<b>WT</b> connect with <b>PL</b> , <b>GY</b> and <b>BN</b>

#### Control instructions:

- Note 1: **WT** is not connected with **PL**, **GY** and **BN**, when the actuator is running.

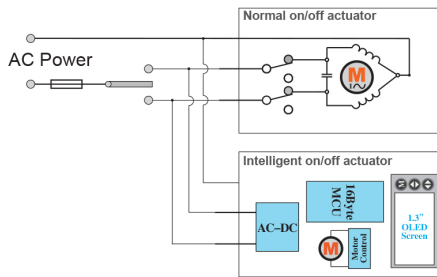
#### Wiring Instructions:

1. Fuse: refer to manual for more parameters
2. SW switching capability: refer to manual for more parameters
3. Feedback signal contact load capacity: 0.1A/250VAC 0.5A/30VDC
4. Make sure actuator connect to ground

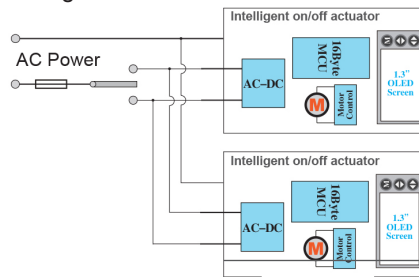


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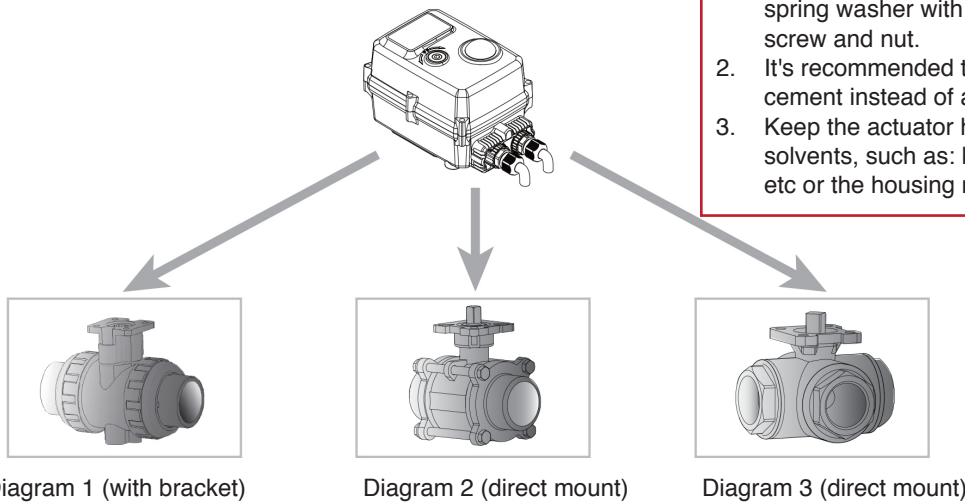
Wrong wiring



Right wiring



## MOUNTING INSTRUCTIONS



### Notice

1. When assembling with valve, it's suggested to use spring washer with flat washer in order to fasten the screw and nut.
2. It's recommended to use 704 silica gel or instant cement instead of anaerobic adhesive and UV glue.
3. Keep the actuator housing away from organic solvents, such as: kerosene, butane, trichloroethane, etc or the housing may crack.

Diagram 1: UPVC plastic ball valve and bracket assembly

Diagram 2: 3 piece stainless steel ball valve assembly

Diagram 3: 3 piece stainless steel 3 way ball valve assembly

## INSTALLED VALVE TECHNICAL REQUIREMENTS

Valve type	Recommend install condition
Wafer butterfly valve	Actuator rate torque $\geq$ 2 times valve max torque
Flange butterfly valve	Actuator rate torque $\geq$ 1.7 times valve max torque
Metal ball valve	Actuator rate torque $\geq$ 1.7 times valve max torque
Plastic ball valve	Actuator rate torque $\geq$ 1.5 times valve max torque

1. If the ball valve is out of operation for a long time, and the torque value of first on or off is the max torque
2. When installing a direct mount model valve, the hole deep is  $\leq$  0.79in. It requires cutting if the output shaft is longer than 0.79in.
3. Pay attention to the following items if you install the bracket and coupling by yourself:
  - The intensity of the bracket should meet the using requirements: the bracket twisting extent  $<$  0.0079 in the process of on or off
  - The parallelism of the bracket  $<$  0.020
  - When processing the shaft hole at both ends of the coupling, it is necessary to ensure the accuracy and concentricity. The purpose is to make sure the mechanical hysteresis  $<$  10°, otherwise it will cause the actuator to work incorrectly.
4. The screw should be installed with a spring washer and flat washer and we suggest you daub some glue cement around the screw in case of the screw loosening.
5. After installation, the user should switch the valve on and off one time with handle device first. Modifying the valve after makes sure it works well.

## **COMMON FAILURES & PROCESSING METHODS**

	<b>Fault Phenomenon</b>	<b>Fault Cause</b>	<b>Processing Methods</b>
1	Actuator not working	Power not connected	Connect power
		Voltage below level or incorrect	Check whether voltage is within the normal range
		Overload protection of motor after 3S	Check whether valve is stuck or torque value is too large
		Terminal loose or poor contact	Check and correctly connect terminal
		Starting capacities poor run	Contact the manufacturer for repair
2	No feedback signal	Line barrier of user acquisition signal	Connect user acquisition signal
		4-20mA deviation is too big	Adjust the reference value
		4-20mA transducing circuit damage	Contact manufacturer for repair
3	Actuator not fully closed	Use feedback signal to control actuator	Receive feedback signal doesn't mean actuator is fully closed, so do not cut power off
		Return difference increased due to abrasion between actuator and valve rod	Adjust valve - off position to realize deviation by the menu or contact manufacturer for repair
4	Actuator interior water ingress	OD of incoming line cable is non-standard	Adjust valve-off position to realize deviation by the menu or contact the manufacturer for repair
		Waterproof treatment of incoming line incomplete	Contact manufacturer for repair
		Actuator lens worn out	
		Screws on connection cover/head cover/side cover loose	

## **WORKING ENVIRONMENT**

- Indoor and outdoor are both options
- Not explosion-proof products. Do not use in flammable and explosive environments
- You need to install protective devices for the actuator if it is exposed to rain or sunshine
- Pay attention to the ambient temp
- When installing, consider the reserved space for wiring and repairing
- When power is on, do not dismantle actuator and valve or connect wiring

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