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Grooved Butterfly Valve User Manual (XD381X/D381X)



RoHS

Product Review

The butterfly valves have the characteristics of simple operation, light weight, good sealing performance, flexible opening and closing, and accurate opening and closing display position. Mainly suitable for controlling valves in fire protection systems. When the valve is opened or closed to a designated position, the signal device on the valve can send a signal to the fire detection center, which can display the valve's open or closed status to prevent the valve from accidentally closing and affecting the automatic sprinkler fire extinguishing function. It can also serve as a control valve on the water supply and drainage pipeline, playing a cutting or regulating role.

Working Principle

The butterfly valves rotate the valve stem by operating the transmission device, and at the same time, the valve stem drives the disc to rotate to achieve opening and closing. In the cylindrical channel of the butterfly valve body, the butterfly disc shaped plate is connected to the valve stem, and the rotation of the valve stem will drive the butterfly plate to rotate for flow control. The rotation angle is between 0°-90°. When the butterfly plate rotates to 90°, the butterfly valve is in the fully open position in the pipeline. At this time, only the thickness of the butterfly plate is the resistance to fluid flow, and the flow resistance is very small. At the same time, when the butterfly plate rotation angle is between 0°-90°, it can be used to regulate the flow of the medium.

Product Feature

- Low operating torque, labor-saving and lightweight.
- The flow characteristics tend to be straight and the regulation performance is good.
- The structure is simple and compact, with a 90¡ã rotation for quick opening and closing.
- The disc is covered with rubber and adopts a bidirectional seal, with good sealing performance.
- Installation has no directional requirements.
- The valve disc and valve stem adopt a pin-free design to reduce leakage points and ensure reliable performance.
- Non toxic anti-corrosion coating: The inner and outer surfaces of the valve are coated with non-toxic epoxy resin powder electrostatic coating, which is anti-corrosion and durable.

Specification & Standard

Design standard		MSS SP67、BS EN 593
Grooved standard		AWWAC606,ISO6182
Top flange standard		ISO 5211
Coating Standard		AWWA C550
Nominal Pressure PN		300 PSI、363PSI/PN10、PN16
Nominal Diameter DN		50 ～ 300mm
Test Pressure	Strength Test	2 times the rated working pressure
	Sealing Test	2 times the rated working pressure
Durability (number of opening and closing cycles)	Manual/ Electric	1000 times
Applicable Temperature		0 ～ 80℃
Applicable Field		Fire Protection/Water Services
Applicable Medium		Water or mediums with physical and chemical properties similar to water

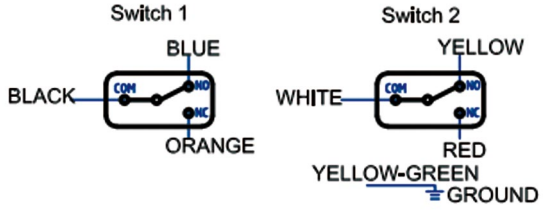
Note：Due to the continuous optimization of performance, there may be discrepancies between the actual product and the photo. Please refer to the actual product for details.

Wiring diagram

Signal description:

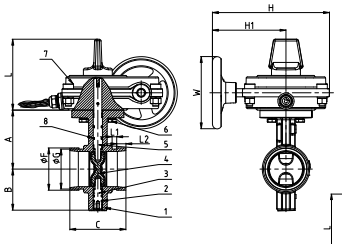
1.Switch parameters:16A 1/2HP 125/250VAC

2.Wiring diagram:

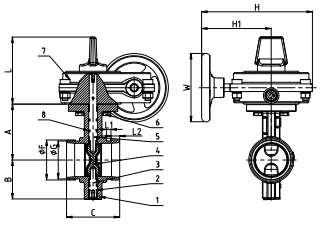


Introductions: Our company has two sets of signal wires, one set consisting of black, blue, and orange, the other set consisting of white, yellow, and red, and green is common ground wire. The functions of two sets are the same, and can be connected to either set, the other set of backup or connected to auxiliary equipment such as alarm bells, or both sets can be connected simultaneously to generate dual signals.

Design & Dimensions



XD381X



D381X

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Dimensions

DN		Dimensions(mm)											
Inch	DN	A	B	C	ΦF	ΦG	L	L1	L2	H1	H	ΦW	ISO5211
2"	50	89	65	81	60.3	57.15	122.5	7.93	15.88	127	202.2	125	F07
2.5"	65	102	71	97	73.0	69.09	122.5	7.93	15.88	127	202.2	125	F07
2.5"	65	102	71	97	76.1	72.26	122.5	7.93	15.88	127	202.2	125	F07
3"	80	109	81	97	88.9	84.94	122.5	7.93	15.88	127	202.2	125	F07
4"	100	128	95	116	114.3	110.08	122.5	9.53	15.88	127	202.2	125	F07
5"	125	141	111	148	139.7	135.48	122.5	9.53	15.88	127	202.2	125	F07
5"	125	141	111	148	141.3	137.03	122.5	9.53	15.88	127	202.2	125	F07
6"	150	153	133	148	165.1	160.9	122.5	9.53	15.88	139.5	215	225	F07
6"	150	153	133	148	168.3	163.96	122.5	9.53	15.88	139.5	215	225	F07
8"	200	184	164	133	219.1	214.40	122.5	11.10	19.05	198.5	274	225	F10
10"	250	216	196	159	273.1	268.28	122.5	12.70	19.05	198.5	274	225	F10
12"	300	254	226	165	323.9	318.29	132	12.70	19.05	198.5	293.5	225	F10

Material Specifications

Part No.	Part	Standard Specification	Optional Specification
1	Body	ASTM A536, 65-45-12	
2	O-Ring	NBR	EPDM
3	Stub Shaft	AISI 431	
4	Disc	ASTM A536, 65-45-12+EPDM	ASTM A536, 65-45-12+NBR
5	Drive Shaft	AISI 431	
6	Hex Nut	Carbon Steel Zinc plated	AISI 304 AISI 316
7	Signal Gearbox	Body: ASTM A536, 65-45-12	
8	O-Ring	NBR	EPDM

Installation & Application

1. Before installation, please carefully check whether the product information matches the operating conditions. If there are any differences, please consult before use; Special working conditions such as seawater and corrosive media must be specified and customized according to the working conditions.
2. Before installation, carefully check whether the valve markings match the usage requirements, and ensure that the connecting pipeline size is consistent with the butterfly valve to ensure the sealing effect of the sealing surface.
3. Before installation, the valve channel and sealing surface should be inspected. If there is dirt, it should be wiped clean with a clean cloth.
4. During installation, the valve should be opened and closed with steady force.
5. The tightening force of the connecting bolts during installation should be uniform and appropriate.
6. This valve can be installed on horizontal or vertical pipelines, and the installation position should ensure convenient use, maintenance, and replacement.
7. For manually operated valves, when facing the handwheel, counterclockwise rotation is the opening direction, and clockwise rotation is the closing direction. Electric operation can be carried out according to the manual of the electric device.
8. It is strictly prohibited to use a wrench to increase force to close the valve, in order to avoid deformation of valve accessories or damage to the sealing surface medium.

Transportation & Storage

1. The valve should not be damaged during transportation. Check the packaging of the valve, and if there is any damage, the valve should be repackaged.
2. When transporting and storing butterfly valves, the disc should be opened at a position of 4-5°in the closed state to prevent the sealing surface from being squeezed.
3. The valve should not be dragged on the ground or moved along with the ground surface to avoid damage to the external connections and surface.
4. The valve should be placed in a cool and dry place, and waterproof and dustproof measures should be taken.
5. When the valve is not in use for a long time, regular inspections should be conducted every six months to remove dirt and apply anti rust oil.

Common Problems & Solutions

1. Leakage of sealing surface and solutions
   1.1The sealing surface is contaminated and should be cleaned to remove any dirt.
   1.2 The sealing surface is damaged and the valve should be replaced.
2. Handwheel driven butterfly valve, rotating handwheel, handwheel shaft not rotating and solutions
   The handwheel pin is broken and should be replaced.

Maintenance

1. Do not rely on the valve to support other heavy objects, do not knock on the valve while it is in operation, and do not stand on the valve.
2. The bolts on the top flange and worm gear head are indispensable, and the threads should be intact. The fasteners of each part of the valve should be regularly checked for looseness or damage, and if there are any problems, they should be repaired in time.
3. For working conditions with changes in temperature and pipeline pressure, it is recommended to tighten the bolts again after 24 hours of operation to compensate for any possible loosening.
4. When repairing and maintaining valves, users should use accessories of the same size and material as the original.
5. Valves that are not frequently opened or closed should also be regularly turned with the handwheel.
6. For outdoor valves, a protective sleeve should be added to the valve stem to prevent rain, snow, dust, rust, etc.
7. The valves in use should be regularly maintained. Generally, valve flexibility operation, inspection, and drainage should be carried out at least once a month. Equipment with filtration function or used in environments containing debris should be maintained more frequently, and inspected and cleaned at least once a week to avoid affecting its function.
8. When the weather is cold, if the valve is normally closed, water should be drained and attention should be paid to antifreeze.
9. Please strictly follow the instructions or consult in advance, otherwise our company will not bear any losses or responsibilities in case of any problems.

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