Water Flow Indicator
Model No.: LF-WFS-450

Installation, Operation & Maintenance

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

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I. OVERVIEW

LF-WFS series water flow indicator is a constituent part of automatic sprinkler system. Generally, it is installed on the feed mains or cross-bar water pipe in the subareas. It is a component which transfers water flow signals into electrical signals. It can also form linkage with other component to control the opening of fire water pump.

Operating principle

a. The electrical signal of LF-WFS series water flow indicator is connected with controller. In case of fire disaster, the system will be on, the sprayer will inject water, so that the water in the pipe will flow to impact the blade of water flow indicator, so that the blade will offset and lean in the direction of water flow. The actuating rod extrudes the microswitch, so that the time delay circuit is connected. After the set delayed time reaches, if the blade does not return, then the electric contact will close to give the signal of electric contact; the signal will be transferred to the controller to report the area of fire disaster. The controller starts the automatic alarming system of fire disaster, so as to have the effects of inspection and alarm area indication.

b. When the water flow stops, the acting rod will return, the switch contact will be switched off, so that the signal of electric contact will be eliminated. Alarming signal after a time delay is to prevent the false alarm caused by instantaneous pressure fluctuation of fire control.

Applicable place

LF-WFS series water flow indicator is applicable to closed systems (wet type, dry type, pre-acting, repeated on/off pre-acting) and closed automatic sprinkler-foam systems.

II. TECHNICAL PARAMETERS

1. Rated working pressure	450PSI
2. FM Sensitivity	① No-alarm flow ≤15L/min ② Alarm flow > 15L/min, ≤75L/min
UL Sensitivity	① No-alarm flow ≤15L/min ② Alarm flow > 15L/min, ≤37.5L/min
3. Capacity of switch contacts	AC 125/250V 8A; DC 24V 3A; DC 30V 2.5A
4. Ambient temperature	0-49°C
5. Steel pipe	SCH10-40

III. MAIN COMPONENTS

LF-WFS series water flow indicator is mainly composed of the saddle, blade rack, bottom plate, outer cover, delayer, micro-switch, junction box, etc.

1. The main outline dimensions are shown in Figure 1 Outline Drawing.
2. Main dimensions of water flow indicator are shown in Table 1.

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Figure 1 Outline Drawing

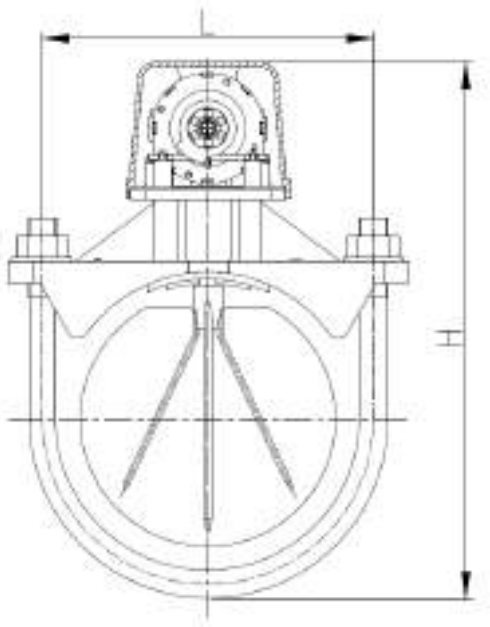


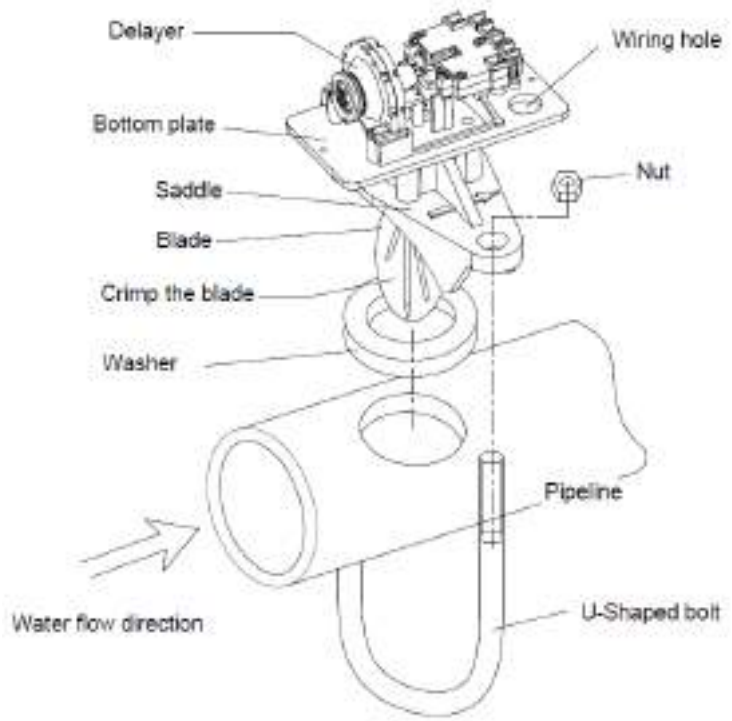
Table 1 Main Dimensions of Water Flow Indicator

Model	Specification	L	H
LF-WFS-450	DN50	85	188
LF-WFS-450	DN65	92	200
LF-WFS-450	DN80	106	220
LF-WFS-450	DN100	134	245
LF-WFS-450	DN125	162	272
LF-WFS-450	DN150	189.5	298
LF-WFS-450	DN200	240	350

IV. INSTALLATION AND DEBUGGING AS WELL AS PRECAUTIONS

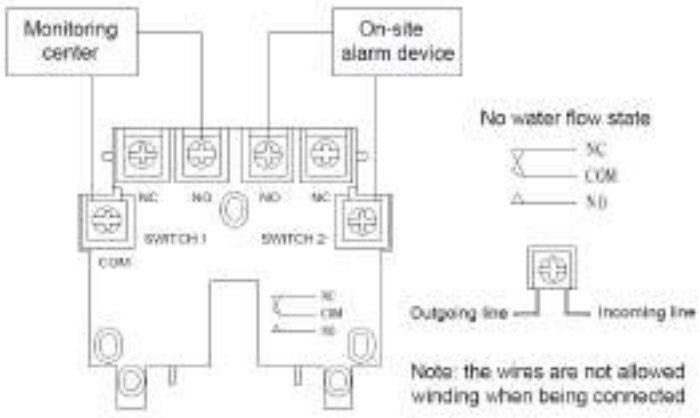
1. **Installation of water flow indicator:** at the pre-set installation position, use a tapper to drill on the main pipeline and remove burrs according to the product specification; roll up the blade into a small size and put it into the pipeline, install the U-shaped bolt and fasten it up with two fastening nuts, and the specific installation drawing is shown in Figure 2.

Figure 2 Installation Diagram



2. **Wiring:** The typical wiring diagram is shown in Figure 3.

Figure 3 Typical electrical connections



3. **Adjustment:** The delay time can be adjusted by rotating the delayer adjusting knob. The ex-factory delay time of the water flow indicator is adjusted as 15s. If specially required by users, the delay time can be adjusted by rotating the delayer adjusting knob.
4. For the debugging and regular inspection of the water flow indicator, open the test device at the end of the subarea to release the water flow for simulation test, inspect the water flow indicator for the action. In case of any faults, inspect the water flow indicator and the alarm device separately, and remove the faults to let the system be in servo state.
5. **Precautions:**
   a. Before installation, the water flow indicator shall be confirmed that the flow direction of the media in the pipeline is consistent with the direction of arrow of the water flow indicator, and the water flow indicator shall be horizontally or vertically installed on the system pipeline, and shall not be laterally installed or inversely installed;
   b. The blade plane shall be perpendicular to the flow direction of the pipeline;
   c. When drilling the hole, the center of the hole has to be on the center line of the pipeline; the hole size is shown in Table 2.

Table 2 Hole Size

Specification	Hole size
DN50, DN65	32+2mm
DN80-DN200	51+2mm

   d. Pipelines connecting the water flow indicator must guarantee that its front and rear straight-pipe length shall not be less than 300mm.
   e. During installation, the blade shall be confirmed not to collide with the inner wall of the pipeline, and the blade and transmission rod shall act flexibly.
   f. During installation, the electrical junction box of the water flow indicator shall be vertical.

V. TRANSPORTATION AND STORAGE

The water flow indicator shall be protected against rain and damping during transportation, and shall be prevented from impact during handling; it shall be stored in ventilated and dry warehouse and avoided to store with corrosive materials, and the storage temperature shall be between -10°C and +40°C.

VI. INFORMATION OF MANUFACTURER

Manufacturer	Lichfield Fire & Safety Equipment Co. Ltd (LIFECO)
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