

# TECHNICAL NOTES & INSTALLATION DESCRIPTION

Product name : **FESCO ALARM VALVE**      Model : **FAVB**

Manufacturer : **PARADISE INDUSTRY**

65-2, Chooneui-dong, Wonmi-ku, Buchon, Kyunggi-do, Korea

## 1. PRODUCT DESCRIPTION

As an essential part of a wet sprinkler system, Paradise Alarm Valves are used for device that detects water flows of fixed type extinguisher installed in high-rise apartments or parking lots. In case of fire, Paradise Alarm Valve advises an automatic alarm of unusual water flows, which will then transform the flow into electric signals generating alarm sound. Made of stainless-steel, Paradise Alarm Valve undergoes a strict in-house test on inner pressure and function.

## 2. GENERAL FEATURES

- There is no false alarm that might result from remaining airs in the outlet pipe.
- In case of a pipe leakage that causes water flows to drop to 16LPM or lower, a ball check valve inside will supply a properly pressured water to the pipe, preventing the Alarm Valve from generating a false alarm.
- It is designed to fit into tiny space for installation.

## 3. HANDLING and ACCESSORIES

### ◆ Transport

Pipes are arranged with steel pipe from the valve body to the test & drain. For that reason, Paradise Alarm Valve must be handled with an extreme care to prevent damages in the process of loading and unloading.

### ◆ Checking Components

Open the package to check if all components are intact.

Component	No. of unit	Remark
Valve body	1	Incl. Retarding chamber line pipe
Pressure gauge	2	Delivered in separate packages
Pressure switch	1	
Pipe attached to gauge and gauge valve	2	Packed together with valve body

## 4. AVAILABILITY and SERVICE

The Model FAVB Alarm Valve and accessories are available through the head office. Refer to the Paradise Industry's website (<http://www.paradise-ind.co.kr>) or contact The Paradise Industry directly.

## 5. GUARANTEES

For details of warranty, refer to Paradise Industry's current list price schedule or contact The Paradise Industry directly.

## 6. OPERATION

The Model FAVB Alarm valve should be installed vertically on wet-pipe sprinkler systems.

When the fire protection system is initially being pressurized, water will flow into the system until the water supply and system pressure become equalized, and the stainless-steel Disc in the Alarm Valve is closed. Once the pressures have stabilized, the Alarm Valve is in service and the Seat Ring is sealed. Consequently, with the Alarm Valve set for service, there is no flow through the alarm port to the alarm devices (i.e., water motor alarm or pressure switch).

When there is a steady flow of water into the sprinkler system due to a sprinkler operation, the

Disc opens. Water is then permitted to flow into the Seat Ring and out through the alarm port towards the 4.5mm(0.18inch) inlet restriction. When the flow through the inlet restriction in the alarm port line exceeds the flow through the 4.5mm(0.18inch) outlet restriction, the Retarding Chamber (where provided in the case of systems with variable pressure) begins to fill. Subsequently, the water motor gong or the pressure switch will be actuated. The alarms will continue to be actuated as long as the Disc remains open. Water in the alarm lines will automatically drain out through the outlet restriction when the Disc closes due to a discontinuation in the flow of water into the sprinkler system. Minor flows, resulting from small surges, travel around the disc through external by-pass trim to minimize false alarms. Any water in the alarm line is automatically drained, further reducing the possibility of a false alarm due to a successive transient surge in supply pressure. For the constant pressure system, the retard chamber is not required and water passing through the in the Seat Ring flows directly to and activates the mechanical and electrical alarms.

## 7. INSTALLATION

### A. Before the Installation

- Prepare 2 gasket packings suitable for the Alarm Valve flange to be installed.
- Flange bolt & nut (Incl. Plain and spring washer)
 

100A : M16 × 75l.....	16EA
150A : M20 × 75l.....	16EA
- Also prepare Teflon tape for piping purpose and wiring materials if needed.

### B. Pipe Flange Welding

- Properly position Alarm Valve and bolt hole. Then weld firmly in accordance with the pipe flange plan considering the height of Alarm Valve and gasket packing.

### C. Before the Installation

- When the installation is completed thoroughly clean along the interior of pipes. Remove slag by knocking welded parts of the pipe with a hammer, and if possible, flush the interior with water of

5kg/cm<sup>2</sup> until it is completely rinsed out.

Negligence of cleaning will:

- 1) cause repeated false alarms due to the damaged seat rubber in the Alarm Valve.
- 2) retard or even result in a failure of fire extinction when the orifice of sprinkler head is choked up.

### D. Valve Installation

- 1) Once again, clean interior of valve body. Check disk, seat rubber and seat ring hole before the installation
- 2) Install valve body, inlet, and the outlet pressure meter.
- 3) Install retarding chamber for variable pressure system according to the trim chart. For constant pressure system, install the pressure switch or water motor gong directly without the retarding chamber.
- 4) For the use of water motor gong, connect directly the water motor line to the 0.75inch retarding chamber tee line. Refer to the trim chart.
- 5) Holes on the Alarm Valve must be plugged in order to prevent leakage if they are not in use.

### E. Hydrostatic Test

The Model FAVB Alarm Valve is manufactured and listed for use at a maximum water working pressure of 12.3kg<sub>f</sub>/cm<sup>2</sup>. The valve may be hydrostatically tested at 20kg<sub>f</sub>/cm<sup>2</sup>.

## 8. PLACING THE SYSTEM IN SERVICE

When the wet-pipe system is ready to be placed in service, verify that all equipment is adequately heated and protected to prevent freezing and physical damage.

### Note

For proper operation of the wet system and to minimize unwanted(false) alarms, it is important to remove trapped air from the system when filling it with water. Air trapped in the system may also cause intermittent operation of the water motor alarm during a sustained flow of water. Consider installation of auxiliary vents to facilitate venting.

### Caution

Opening of the water supply main control valve will

result in the system.

1. Verify that auxiliary drains are closed and that the system is free of leaks.
2. Open the test drain valve to allow air to escape from the system while it is filling with water.
3. If desired, close the 1/2" ball valve (near the retarding chamber) to prevent local alarms from operating while filling the system.
4. Slowly open the OS&Y valve.
5. Allow the system to completely fill with water. Allow water to flow from the test drain valve, and any other open vents provided, until all air is exhausted from the system.
6. After all air is exhausted from the system, close the test drain valve and all other open vents.
7. The outlet pressure gauge should indicate water pressure equal to or greater than the water pressure indicated on the inlet gauge.
8. Open the 1/2" ball valve (near the retarding chamber), and verify that all other valves are in their normal operating position.

**WARNING POSITION**

Item	Position
OS&Y valve	Open
Ball valve 1/2" (retard chamber line)	Open
Ball valve 1/2" (pressure gauge line)	Closed
Test & Drain valve	Closed
Gauge valve	Open

**9. INSPECTION**

**A. Daily check (routine inspection)**

**B. Monthly check**

1. To test electric alarms, open the test valve.
2. Check :
  - 1) Electric alarm pressure switches should activate.
  - 2) Electric local alarms should be audible.
  - 3) The local water motor alarm should be audible.
3. Close the test valve used, when testing is complete.
4. Verify:

- All local alarms stop sounding and electric panels reset.
- Retarding chamber and water motor alarm supply piping has drained properly

**C. Annual check**

1. Power off.
2. Close OS&Y valve, placing the system out of service.
3. Completely drain what is filled in the pipe.
4. Use appropriate wrench to loosen and remove cover screws and remove cover.
5. Inspect the interior. Wipe away all contaminants, dirt, and mineral deposits. Clean any orifices in the seat that are restricted or plugged by mineral deposits. Do not use solvents or abrasives. Check if seat rubber is damaged or seat ring hall is choked up and repair if needed.
6. Place front cover back and make sure to tighten up each bolt evenly so as to prevent water leakage.
7. Power on to start pump and add pressure before going through the general procedures of operation test.
8. Complete the annual check when every part is in normal condition.

**10. LISTINGS AND APPROVALS**



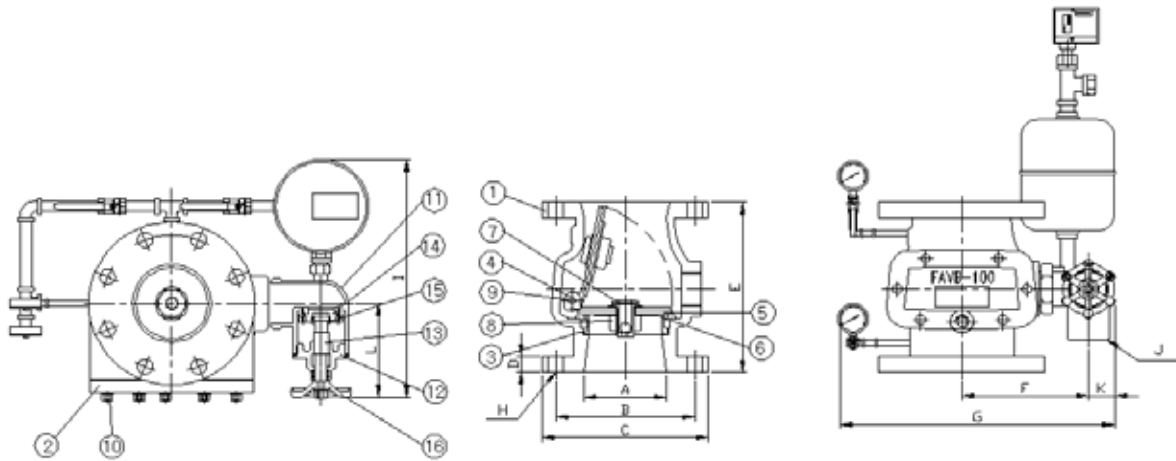


Figure 1. Model FAVB Alarm Valve

◆ Specification

Direction	Vertical	
Max. working pressure	12.3 kg <sub>f</sub> /cm <sup>2</sup>	
Test pressure	20 kg <sub>f</sub> /cm <sup>2</sup>	
Flange size	KSB 1513 10K (or ANSI)	
Color	RED	
Model	FAVB 100R	FAVB 150R
Size	100A	150A
Max. flowrate (4.5m/sec)	2,100 l/min	4,800 l/min
Weight	32.2kg	53.2kg
Packing	1 EA	

◆ Dimension

Dimension Model	A	B	C	D	E	F	G	H	I	J	K	L
FAVB 100R	100	175	210	24	250	169	415	8-Ø19	376	50A	50	153
FAVB 150R	150	240	280	26	280	199	480	8-Ø23	391	50A	50	153

( Flange : KS standard, for the flanges of other standards, dimensions can be different)

◆ Material

No	Part	Material	No	Part	Material
1	Body	Cast Iron(GC200)	9	Spindle	STS 304
2	Cover	Cast Iron(GC200)	10	Bolt	Steel
3	Seat Ring	Bronze(BC6)	11	T.V Body	Cast Iron(GC200)
4	Disc & Arm	STS 304	12	T.V Cover	Cast Iron(GC200)
5	Disc Seat	Viton	13	T.V Spindle	Brass
6	Seat Cover	STS 304	14	T.V Disc	Brass
7	Bushing	Brass	15	Disc Bushing	Bronze(BC6)
8	Nut	Steel	16	Handle	Aluminum Alloy Casting

