ALARM CHECK VALVE
MODEL: FIG 119B

SPECIFICATION
Type: Pilot control valve, Working pressure: 16bar.
Flanged to BS4504 PN16

PRESSURE/TEMPERATURE RATINGS	
Working pressure	16 Bar
Working temperature	-10°C to 80°C

MATERIALS			
Part	**Meterial**	**ASTM Spec**	**EN Spec**
Body, disc	Ductile iron	A536 65-45-12	1563 EN-JS1050
Seat ring	Stainless steel 304	B 124 C37700	2874 CZ122
Stem	Stainless steel 304	A276 S304 00	907 304 C15
Fitting	Stainless steel 304 Carbon Steel	A276 S304 00 -	907 304 C15 -
Painting	Red Epoxy Coating		

DESCRIPTION
• Alarm Check valve are divided seat ring, rubber faced clapper, water flow alarm check valve which are intended for use in wet pipe fire protection systems. They may be installed vertically and they are designed to automati- cally actuate electric or hydraulic alarm when there is a steady flow of water into the system that is equivalent to the discharge rate of one or more sprinklers.

• Alarm check valve trim includes pressure gauges to monitor system pressure conditions, a by-pass check valve, a main drain valve, and an alarm test valve. The by-pass check valve serves to reduce the possibility of false alarm by permitting slow as well as small transient increases in water supply pressure to be passed through to the system without opening of the water way clapper.

OPERATING PRINCIPLES
• 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 torsion spring closes the clapper in the Alarm Check Valve. Once the pressure has stabilized, the Alarm Check Valve is in service and the centrally located groove in the seat ring is sealed. Consequently, with the Alarm Check Valve set for service there is no flow through the alarm port to the alarm devices (water motor alarm or pressure alarm switch).

• When there is a steady flow of water into the sprinkler system due to a sprinkler operation, the Clapper opens. Water is then permitted to flow into the centrally located groove in the Seat Ring and out through the alarm port towards the Restriction Assembly. When the flow through the inlet restriction of the Restriction Assembly exceeds the flow out through the outlet restriction, the Retard Chamber where provided in the case of system with variable pressure, begins to fill. Subsequently, the water motor alarm or pressure alarm switch will be ac- tuated. The alarm will continue to be actuated as long as the Clapper remains opened. Water in the alarm lines will automatically drain out through 3mm drain orifice in the Restriction Assembly when the Clapper close "due to a discontinuation in the flow of water into the sprinkler system.

• In the case of variable pressure systems, slow as well as small transient increases in water supply pressure may continue to be built up in the system without opening of the clapper. A transient surge in supply pressure which is sufficient to only momentarily open the Clapper will not cause a false alarm, and a portion of the increase in pressure will be trapped within the system, thus reducing the possibility of another opening. Any water in the alarm line is automatically drained, which helps to further reduce the possibility of a false alarm due to a successive transient surge in supply pressure.

1. Profuct performance and use

(1) Wet alarm valve is an important component part of the wet automatic sprinkler system. mainly com- posite by wet alarm valve, retard chamber and water motor alarm, It's main function is: When the sprinkler open and make the water flow in the pipeline, to open the valve automatically, and water flows into the hy- draulic alarm and pressure switch and the alarm sounds a warning and alarm signals. In the automatic fire extinguishing system, wet sprinkler system is one of the most extensive application systems.
(2) Wet automatic sprinkler system for the application of environmental temperature 4℃~70℃.
(3) Wet alarm valve have many advantages, such as, stable performance, efficient fire, action sensitive and simple maintenance, access to reliable, long life. Therefore, they have been widely used in high-rise build ings, hospitals, hotels, office buildings, shopping malls, warehouses, factories and underground engineering, and other places suitable for water fire-fighting.

2. Main technical parameter and dimensions

➡ Dimensions

Unit:mm

Size	Height of Alarm valve	Outside diameter of flange	Inside diameter of flange screw hole	Diameter of screw hole	Quantity of screw hole
DN80	250	200	160	18	8
DN100	250	220	180	18	8
DN125	300	266	230	18	8
DN150	300	285	240	22	8
DN200	350	340	295	22	12

3. Installation

(1) The installation of wet valve
a) In order to reduce the tedious installation and avoid mistakes, wet alarm valve and its annex are installed into wet alarm valve device, they send out of the factory after passing the whole test. If you need to change the installation of annex because of the scenic environment, you should refer to the "wet alarm valve devices
b) Before installation, the pipe net should be cleaned to avoid all kinds of debris into the cavity and plug the valve seat.
c) It should be installed vertically at room will not be frozen at normal temperature and also in place where is clear and easy to operate. The height from ground is generally 1.2 m, face from the wall is not less than 1.2 m, both sides from the wall is not less than 0.5 m. At the time of installation, you should pay attention to the direct-ion of water supply and the direction of the arrow on the same direction.
d) Pressure gauge should be installed for easy reading and observation.

(2) The installation of retard chamber
a) When installed the retard chamber, you should distinguish the inlet and outlet. As shown in Figure, the inlet is the instal- lation of three vertical, connecting with the filter export from the wet alarm valve. The outlet is the installation of three horizontals. Respectively, both sides are connected with the water motor alarm and the pressure switch.
b) From top to bottom of the three links of the inlet, all installed the inner connector tube, respectively, in a different configuration of the orifice diameter. The top one is larger and the bottom one is smaller. It should not be installed at the wrong U-turn.
c) The bottom inner connector may not be cancelled or replaced, and cannot be series connect with the valves, it's necessary to sure drainage smooth, Otherwise, it will cause change of alarm function.

INSTALLATION PROCEDURE

• **Pipe flanged welding:** Properly position Alarm Check Valve and bolt hole and then firmly weld in accor dance to the pipe flange plan considering the height of Alarm Check Valve and gasket packing.

• **Pipe Cleaning:** when the installation is completed, clean thoroughly the pipe interior. Remove slag by knocking welded parts of pipe with a hammer and if possible, flush the interior with pressure water of 5kg/cm2 until it is completely rinsed out. Negligence of cleaning will: 1. Cause repeated false alarm due to the damaged seat rubber in the Alarm Check Valve, 2. retard or even result in failure of fire suppression when the orifice of sprinkler head is choked up.

• **Note:** Alarm Check Valve depends upon the trim described in this data sheet being installed in accor- dance with the following instruction. Failure to follow the appropriate trim installation instructions may prevent the device from function- ing properly as well as void listing/approvals, and the manufacture's war- ranties. The Alarm Check valve must be installed in readily visible and accessible locations. It is recom- mended that provision be made for viewing of the alarm line drain water by locating the main drain outlet in a readily visible area. Wet pipe fire protection systems must be main- tained at a minimum temperature of 40C.

Step 1: Trim the Alarm Check Valve in accordance with applicable. Apply pipe thread sealant sparingly to male threads only.

Step 2: The Alarm Vent Trim illustrated must be installed if a water motor alarm in not to be used.

Step 3: Plug unused alarm connections.

Step 4: Suitable provision must be made for disposal of alarm line and system drainage water. Drainage water must be directed such that it will not cause damage or result in dangerous conditions.

Step 5: The alarm line drain must be arranged so that there will be no danger of freezing.

Step 6: The check valve in the externally mounted bypass around the waterway Clapper must be installed with its arrow pointed up and the drain check valve must be installed with its arrow pointing towards the drain.

Step 7: It is recommended that a vent connection, be piped from a cross main or branch line at the point most remote from the alarm valve. The vent line should be connected to the top of a cross main or to the end of a branch line and be located at the highest level of a multi-level installation. The vent connec- tion can be used to bleed off excessive air from the system and, therefore, minimize the possibility of a false alarm due to a transient surge in supply pressure. The contraction/expansion associated with an excessive amount of trapped air could also cause the waterway Clapper to cycle open and shut during an inspector's test or during a discharge by a single sprinkler.