

WET ALARM CHECK VALVES

Models AG H-1, AG H-2 y AG H-3

Alarm check valves

Sizes 3", 4", 6" y 8" de 175 psi (12 bar)

Specifications

The AG Sprinkler AG H Series wet alarm valve stations are designed for automatic wet pipe sprinkler systems where fast, reliable activation is required without the need for electrical intervention.

The main body incorporates a clapper-type check valve with a hydraulic alarm function, which prevents backflow and provides automatic signaling via a water motor gong or pressure switches.

Available versions allow for flange/flange (AG H-1), groove/groove (AG H-2), or mixed (AG H-3) connections, and are constructed with high-strength, durable materials (cast iron body and stainless alloy internal components).

The station is supplied with special universal flanges compatible with both DIN and ASME piping standards. As for the grooves, these are standard dimensions suitable for conventional grooved pipe couplings.

Thanks to its compact, modular design and its configurable trim system (constant or variable pressure, with an optional retard chamber), the system effectively eliminates false alarms caused by fluctuations in the water supply pressure. These stations are suitable for both vertical and horizontal installations, ensuring full compliance with NFPA and EN standards, as well as European CE certification requirements.

Technical data:

Model	AG H-1 Flange / Flange AG H-2 Groove / Groove AG H-3 Flange / Groove
Available Sizes	3" DN80, 4" DN100, 6" DN150 y 8" DN200
Working Pressure	175 psi (12 bar)
Coating	Red RAL 3000
Installation Orientation	Vertical and horizontal for 3", 4", and 6" and exclusively vertical for 8"
Trim Options	Trims are available for constant or variable water supply pressures. Regulatory-required auxiliary components, such as pressure switches, alarm buzzers, pressure relief trims, etc., are available. These auxiliary components are sold separately.

Approvals

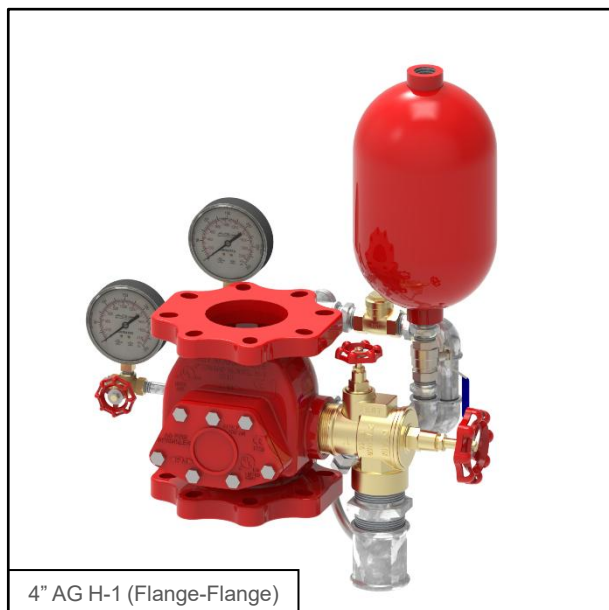
1. UL listed.
2. FM Approved.
3. CE Marked.



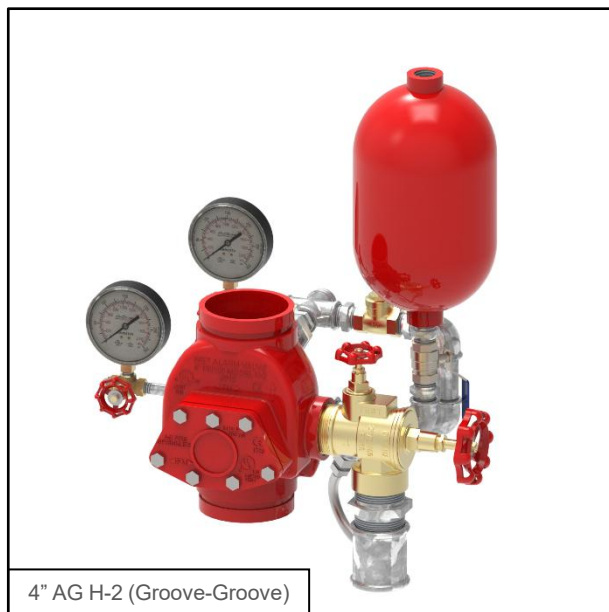
Sections

This document contains various sections that cover the basic features of AG Fire Sprinkler's AG H series wet control stations. For more detailed and accurate information, please refer to the product's installation and maintenance manual.

The sections contained in this document are, in order of appearance: specifications, technical data, approvals, sections, dimensions, technical description, components of the 3", 4", and 6" valves, operation, accessories, components of the 8" valves, installation, wet alarm check valve components, system setup, care and maintenance, accessories table, transport and storage, applicable regulations, responsibilities and requirements, warranty and ordering information.



4" AG H-1 (Flange-Flange)

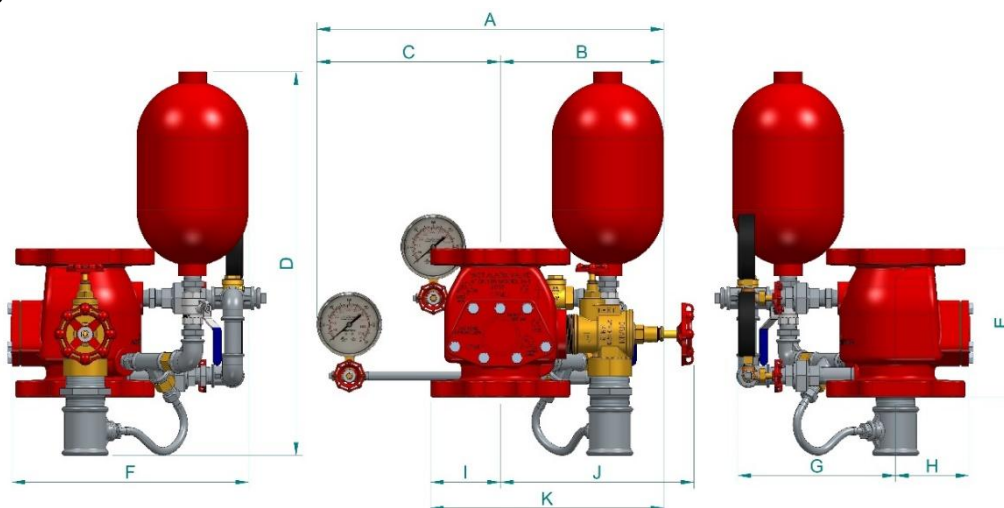


4" AG H-2 (Groove-Groove)



4" AG H-3 (Flange-Groove)

Dimensions



MODEL AG H-1	DIMENSIONS (mm)										
VALVE SIZE	A	B	C	D	E	F	G	H	I	J	K
3" – DN80	565	270	290	590	230	350	220	120	90	300	350
4" – DN100	535	245	290	610	229	385	275	120	100	300	345
6" – DN150	560	270	290	590	254	445	300	145	130	320	420
8" – DN200	560	270	290	520	353	535	355	200	165	355	470

MODEL AG H-2	DIMENSIONS (mm)										
VALVE SIZE	A	B	C	D	E	F	G	H	I	J	K
3" – DN80	565	270	290	590	258	350	220	120	90	300	350
4" – DN100	535	245	290	610	256	385	275	120	100	300	345
6" – DN150	560	270	290	590	297	445	300	145	130	320	420
8" – DN200	560	270	290	520	386	535	355	200	165	355	470

MODEL AG H-3	DIMENSIONS (mm)										
VALVE SIZE	A	B	C	D	E	F	G	H	I	J	K
3" – DN80	565	270	290	590	235	350	220	120	90	300	350
4" – DN100	535	245	290	610	246	385	275	120	100	300	345
6" – DN150	560	270	290	590	279	445	300	145	130	320	420
8" – DN200	560	270	290	520	383	535	355	200	165	355	470

Tecnical description

The AG Fire Sprinkler AG H Series wet alarm valve stations, including all trim configurations, offered sizes, and accessories, are FM approved, UL listed, and carry the European CE mark of conformity.

The check valve is available with three possible installation connections: flanged at both ends (AG H-1), standard groove at both ends (AG H-2), or a mixed version with a flange inlet and grooved outlet (AG H-3). For flanged connections, a gasket must be placed between both elements and the bolts tightened in a cross-sequence. Conversely, for the grooved ends, it is necessary to use a grooved coupling approved for use in fire protection systems.

Regarding the station's materials, the valve body and cover are made of cast iron. The clapper seat is bronze, as is the clapper itself in the 8" valves. For the 3", 4", and 6" sizes, the clapper is made of formed stainless steel sheet, as is its spring, which allows for horizontal installation of these specific sizes. The seal between the clapper and its seat is made of elastomer, a material featuring high abrasion resistance and long-lasting elasticity. The remaining internal components are made of highly corrosion-resistant materials, primarily brass and stainless steel.

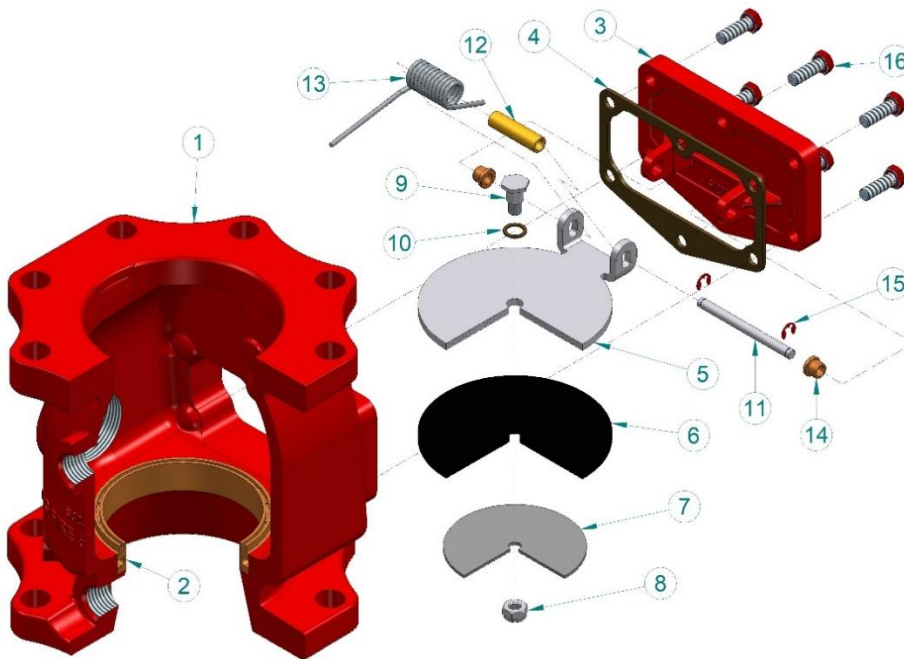
If a variable pressure trim configuration is selected, the assembly includes an approved retard chamber to tackle such fluctuations. Like the main body, it is made of cast iron; its function is to fill with water when the clapper is displaced and, after a few seconds, allow water to flow toward the gong and pressure switch.

The control station is sold with several accessories included in the assembly, along with other optional elements sold separately.

The included items are one pressure gauge to indicate the supply water pressure and another to indicate the sprinkler network pressure. It is also supplied with a double-handwheel test and drain valve. The function of this valve is to drain the system, as well as to simulate the opening of a sprinkler head to test the alarm system. In the bypass between the supply and the system, there is also a non-return valve that allows water to flow into the system but not back, ensuring the station's functionality during pressure fluctuations or supply issues. Finally, as previously mentioned, a retard chamber can be included depending on whether the inlet pressure is constant or variable.

NFPA 13, EN 12845, and similar standards mandate the installation of auxiliary system accessories that are sold separately. This includes the water motor alarm gong, pressure switches, or the pressure relief assembly.

Components of the 3", 4" and 6" valves



N°	DESCRIPTION	MATERIAL
1	Body AG H-1	Cast
	Body AG H-2	Cast
	Body AG H-3	Cast
2	Seat ring	Bronze
3	Cover	Cast
4	Cover gasket	Rigid
5	Clapper	Stainless steel
6	Clapper facing disc	Elastomer
7	Disc Retainer	Stainless steel
8	Lock nut	Stainless steel
9	Disc retainer bolt	Stainless steel
10	Sealing Washer	Hard fiber
11	Shaft	Stainless steel
12	Spring sleeve (only 6")	Brass
13	Spring	Stainless steel
14	Shaft bushing	Bronze
15	Retaining Ring	Stainless steel
16	Bolt	Galvanized steel

Operation

The AG Fire Sprinkler AG H Series wet alarm valve stations must be installed in an automatic fire protection system using a wet pipe sprinkler system.

These systems are characterized by being equipped with a wet alarm valve connected to a piping network with closed-head sprinklers. This is because there is pressurized water inside said piping which, in the event of a fire, is released and provides a rapid response against the flames.

If a fire occurs, its high temperature will break the sprinkler bulb, which will release the pressurized water from the pipe. This loss of pressure will be greater than the flow that the check valve bypass can provide, resulting in a pressure differential between its inlet and outlet. Since there is higher pressure at the bottom of the clapper than at its top, it will cause it to lift, triggering the station and providing all the necessary flow to keep the sprinkler line adequately pressurized until the fire is extinguished.

In addition, when the clapper is displaced, it opens the passage of water toward the internal groove of its seat. This groove has perforations that direct the water through a circuit toward the alarm devices.

Accessories

In parallel with the existing trim of the wet stations, AG Fire Sprinkler offers accessories covered by regulations such as NFPA 13, EN 12845, etc. These accessories are required in a fire protection installation to guarantee its correct operation and monitor its status.

Some of the required auxiliary accessories are a relief valve on the system side, a test and drain valve at the most remote point of the installation, and a water motor gong and alarm pressure switch.

The last two appear in the images on the right. It should be noted that they are installed after the retard chamber, at its upper connection. AG Fire Sprinkler offers the motor gong and the pressure switch separately without the connection trim. The motor gong includes a filter to be placed between the retard chamber and the impeller, as established by the regulations.

These devices are accessories ordered separately and consist of a hydraulic motor (bell or gong) that emits sound and a pressure switch that emits an electrical signal when they receive water.

It should be noted that for the water to reach these devices, it must first fill the retard chamber in the event that a variable pressure trim was chosen. The function of said chamber is to act as a reservoir to counteract the pressure fluctuations that the water supply network to the station may have.

Occasionally, small variations in the station's water pressure cause the clapper to lift minimally and for a short time, which allows water to flow toward the alarm devices. If the retard chamber were not installed, every time this occurred, false fire alarms would be triggered, since there would be no fire, only pressure fluctuations causing the station to operate incorrectly. The retard chamber mitigates this problem, as it acts as a reservoir that collects the water passing through the ring during these brief fluctuations and drains it once they cease.

On the other hand, if a fire situation truly occurs and the station activates correctly, the retard chamber will fill faster than it drains, ensuring that the alarms are indeed activated.

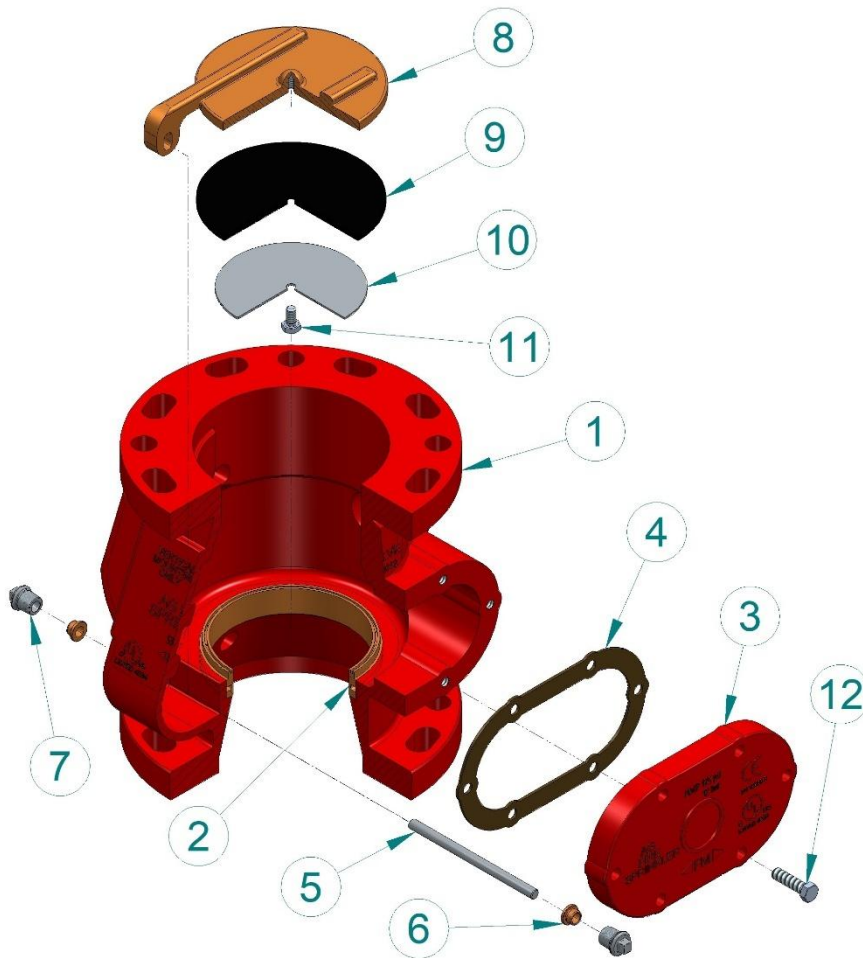


Water motor gong



Alarm pressure switch

Components of the 8" valves



N°	DESCRIPTION	MATERIAL
1	Body AG H-1	Cast
	Body AG H-2	Cast
	Body AG H-3	Cast
2	Seat ring	Bronze
3	Cover	Cast
4	Cover gasket	Rigid
5	Shaft	Stainless steel
6	Shaft bushing	Bronze
7	Plug	Galvanized steel
8	Clapper	Bronze
9	Clapper facing disc	Elastomer
10	Disc Retainer	Stainless steel
11	Disc retainer bolt	Stainless steel
12	Bolt	Galvanized steel

Installation

The AG Fire Sprinkler AG H Series wet alarm valve stations must be installed in accordance with applicable standards, such as NFPA 13, EN 12845, etc., as well as the requirements of the competent authorities.

Wet pipe fire protection systems must be maintained above 4°C at all times, and the control station must be in a visible and accessible location.

The following outlines the process to be followed for the installation of the control station.

In the event that the valve is not pre-assembled at the factory and is assembled on-site, it is fundamental to ensure that all connection nipples, accessories, and devices are completely clean, free of scale or rough surfaces that could interfere with their correct installation.

In the case of horizontal installation, the valve cover must point upward. It must be verified during assembly that the flow direction matches the one intended for the valve.

It must be verified that any unused alarm connections are correctly plugged. Furthermore, it is important to provide an adequate discharge for the water drained from the alarm piping and the system in general, so that it does not pose risks or cause damage to the facilities or people.

Particular attention must be paid to the risk of freezing in the alarm pipe drain line, which must be protected against low temperatures.

The bypass check valve must be mounted with the arrow pointing from the supply water toward the system, ensuring the correct flow direction.

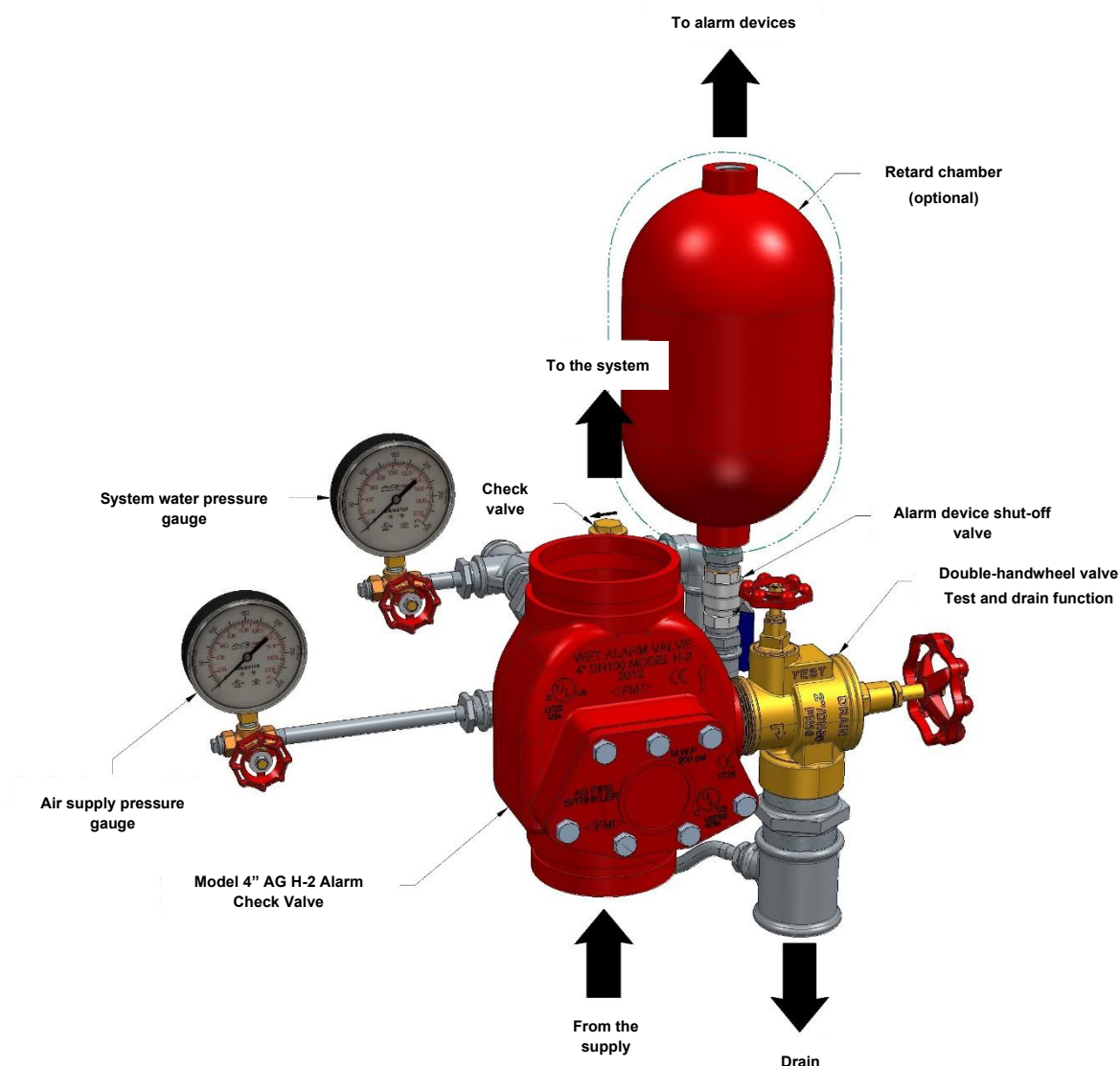
It is recommended to install a vent connection, which can also serve as the inspector's final test connection. This should be branched from a distribution pipe or a branch line located at the point furthest from the alarm valve and the most unfavorable part of the riser.

The purpose of this vent connection is to purge trapped air, which helps minimize the probability of false alarms caused by transient pressure increases in the supply.

Excess air can also cause contractions and expansions of the internal volume, leading to the repeated opening and closing of the water flow clapper, especially during an inspector's test or an individual sprinkler discharge. This event is known as water hammer. The presence of air pockets in the system also increases the proliferation of microorganisms and corrosion due to the oxygen in the air.

It is recommended to vent the system every time the installation is filled with water.

Wet alarm check valve components



System setup

A continuación, se detalla el proceso de armado inicial del puesto, o tras un disparo.

- 1) Closing the control valve:** Before beginning any operation, ensure that the system's main valve (whether a gate valve, butterfly valve, or other type) is fully closed to prevent premature filling of the system during preparation.
- 2) System drainage (if necessary):** Open the main drain valve to drain only the necessary amount of water. This step applies if it is necessary to replace sprinklers, purge residual air, or perform work prior to final setup.
- 3) Component inspection:** Replace sprinklers or other components that have been tampered with or are damaged. Check the overall condition of the trim, valves, and connections before filling.
- 4) Closing the main drain:** Once the inspection or repair is complete, ensure that the main drain valve is fully closed to prevent leaks during pressurization.
- 5) Air purging:** Open the test valve for inspectors (also used as a vent) to allow the release of air accumulated during filling. This connection must be located at a high point or away from the system to facilitate effective purging.
- 6) Gradual filling of the system:** Slowly open the system's regulating valve until water flow begins.

It is important not to open it fully right away to prevent water hammer or the trapping of large volumes of air.

- 7) Verifying full filling:** Keep the test valve open until the water flow is continuous, indicating that the air has been purged and the system is fully filled.
- 8) Closing the vent:** When the water flow is stable and free of air, close the test valve for inspectors.
- 9) Fully opening the system:** Fully open the system's regulating valve while monitoring the readings on the inlet and outlet pressure gauges. The system is considered stabilized when both gauges show similar and constant values.
- 10) Tests:** Perform a flow test on the main drain valve (main drain test) and a test of the alarm devices.
- 11) Securing valves:** Once proper operation has been verified, seal or lock both the system regulating valve and the alarm circuit valve in the open position, in accordance with NFPA 25.
- 12) Notification to the monitoring center (if applicable):** If the system is connected to a remote alarm center or fire station, notify them that the system has been armed and is operational.

Care and maintenance

AG Fire Sprinkler's AG H Series wet control stations must be kept free of foreign matter, freezing conditions, corrosive atmospheres, contaminated water supplies, and any conditions that could impair their operation or damage the device.

The devices described in this document do not require periodic maintenance; however, the proper operation of the control station and alarm systems must be checked regularly. If a fault is found during such a check, it must be corrected and eliminated immediately.

Before interrupting the operation of any fire protection system by shutting off its main water supply, the necessary permission must be obtained, and the relevant authorities must be notified, as well as all personnel who may be affected by this action.

The owner is responsible for the inspection, testing, and maintenance of both the fire protection system as a whole and the devices listed in this document.

It is recommended that these inspections, tests, and maintenance be performed by a qualified inspection service, in accordance with local regulations and/or national laws.

In accordance with NFPA 13 and 25, it is recommended to flush the pipes every 5 years and perform the following tests quarterly:

1. Water flow alarm test: This involves opening the test & drain valve located at the most unfavorable point of the system and verifying that the alarm systems are functioning. At the same time, the drain test valve can be opened to check the alarms.
2. Main drain test: fully open the drain and verify that the supply pressure does not vary significantly from previous tests.

Accessories table

ACCESSORIES	REFERENCE
Alarm motor gong	A005949
Pressure relief trim wet 3"	35400023
Pressure relief trim wet 4", 6" y 8"	A008616
Pressure switch 1 contact, PS10-1A	A004574
Pressure switch 2 contacts, PS10-2A	A004576
Pressure switch 1 contact, PS40-1	A004577
Pressure switch 2 contacts, PS40-2	A004578
Pressure switch 2 contacts, PS100-2	A004579
Pressure switch 1 contact, PS120-1	A004580
Pressure switch 2 contacts, PS120-2	A004581
Handwheel butterfly valve wafer 3" FM&UL 300psi VM-300-W	A005497
Handwheel butterfly valve wafer 4" FM&UL 300psi VM-300-W	A005500
Handwheel butterfly valve wafer 6" FM&UL 300psi VM-300-W	A005503
Handwheel butterfly valve wafer 8" FM&UL 300psi VM-300-W	A005506
Handwheel butterfly valve grooved 3" FM&UL 300psi VM-300-G	A005480
Handwheel butterfly valve grooved 4" FM&UL 300psi VM-300-G	A005482
Handwheel butterfly valve grooved 6" FM&UL 300psi VM-300-G	A006405/A005485
Handwheel butterfly valve grooved 8" FM&UL 300psi VM-300-G	A005487

Transport and storage

Original Packaging

Products must be transported and stored exclusively in their original packaging to preserve their physical integrity and factory-new condition.

Proper Handling

Any improper stacking or handling that could compromise the product's structural or functional integrity must be avoided.

Environmental Conditions

Products must be stored in dry locations, protected from moisture, dust, corrosive agents, and extreme temperatures.

Failure to comply with these conditions may void the warranty and render the product unusable.

Pre-Installation Inspection

Before installation, each product must undergo a visual inspection to verify the absence of physical damage, deformation, or other shipping defects.

Applicable regulations

Fire protection systems must be designed, installed, and maintained in accordance with the criteria established in NFPA and EN standards, as well as all other applicable local and national regulations.

Responsibilities and requirements

Reading the Instructions

The user must carefully read all instructions before installing any AG Fire Sprinkler product.

Product Verification

It is the user's responsibility to verify that AG Fire Sprinkler products are suitable for their intended application, in accordance with industry standards and the technical information provided.

Installer Knowledge

The installer must understand how the product works and the reasons for its specific selection.

Safety Regulations

The installer must be familiar with industry regulations and aware of the risks associated with improper installation.

Serious Consequences

Failure to comply with installation requirements and applicable regulations may compromise system performance, resulting in system failure, personal injury, or significant property loss or damage.

Warranty

For warranty terms and conditions, please contact AG Fire Sprinkler.

Ordering information

SIZE	CONNECTION	ALARM CHECK VALVE 12bar (175psi)			LOOSE TRIM	
		Flange/Flange (AG H-1)	Groove/Groove (AG H-2)	Flange/Groove (AG H-3)	Vertical	Horizontal
3" DN80		A005184	A005217	A005186	35400107	35400106
4" DN100		A005063	A005115	A005107	35400109	35400108
6" DN150		A005124	A008884/A005059	A005154	35400190	35400192
8" DN200		A005223	A005216	A005257	35400191	

Full wet alarm check valve

POSITION	CONNECTION	VALVE SIZE 3" DN80			VALVE SIZE 4" DN100	
		Flange/Flange (AG H-1)	Groove/Groove (AG H-2)	Flange/Groove (AG H-3)	Flange/Flange (AG H-1)	Groove/Groove (AG H-2)
Vertical		A005290	A005292	A005294	A005094	A005113
Variable						
Vertical		A005291	A005293	A005295	A005095	A005114
Constant						
Horizontal		A006596	35400038	35400036	A005096	A009014
Variable						
Horizontal		35400035	35400039	35400037	35400040	35400042
Constant						

POSITION	CONNECTION	VALVE SIZE 6" DN150			VALVE SIZE 8" DN200	
		Flange/Flange (AG H-1)	Groove/Groove (AG H-2)	Flange/Groove (AG H-3)	Flange/Flange (AG H-1)	Groove/Groove (AG H-2)
Vertical		A005146	35400048/A005158	A005151	A005263	A005267
Variable						
Vertical		A005147	35400049/A005159	35400044	A005269	A005268
Constant						
Horizontal		A005162	35400050/35400046	A006592		
Variable						
Horizontal		35400043	35400051/35400047	35400045		
Constant						

Related articles

DESCRIPTION
Automatic sprinklers
Threaded butterfly valves
Butterfly valves with handwheel
Butterfly valves with lever
Threaded gate valves
OS&Y gate valves
NRS gate valves
Gate valves with indicator post

DESCRIPTION
NRS gate valves
Gate valves with indicator post
Pressure reducing valves
Pressure relief valves
Test and drain valves
Flow detectors
Pressure switches
Supervisory switches

The equipment presented in this technical data sheet must be installed in accordance with the latest relevant standards of the National Fire Protection Association (NFPA), FM Global, LPCB, VdS or other similar organizations, as well as applicable governmental regulations.
This document is non-binding. AG Fire Sprinkler reserves the right to make any changes to this document without prior notice.