

Datasheet

Prev5exp20 automatic low pressure water mist nozzle

Part 1

General description

The Prevent Systems low pressure water mist nozzle Prev5exp20 with fast response thermally actuated bulb, is approved by the Loss Prevention Certification Board (LPCB), listed in the “Red Book” and can viewed at RedBookLive.com.



Technical Data

Minimum operating pressure	2.2 bar
Maximum operating pressure	16 bar
Maximum standby pressure*	12 bar
K-factor	31
Nozzle material	Stainless steel 304
Thread size	½” BSP or NPT
Strainer	0.24mm Stainless steel
Thermally actuated bulb	Fast response 3 x 16, RTI 36 (ms) ^{1/2}
Release temperature	57 °C, 68 °C, 79 °C, 93 °C, 141 °C
Nozzle position	Pendent
Nozzle size	Total length = 52mm, max. diameter = 24mm
SIN	Prev5exp20

*The jockey-pump shall be set to maintain the standby pressure in the system, up to a maximum of 12 bar.

Installation

The nozzles must be handled carefully before, -under and -after installation. Nozzles that are damaged in any way, must be replaced. Follow these installation steps:

- The temperature bulb must be checked for damage prior to installing the nozzle into the nozzle fitting. A small air bubble in the temperature bulb should easily slide back and forth when tilting the nozzle. There should be no loss of liquid or cracks in the bulb.
- Slide the cover plate onto the nozzle, where applicable.
- Apply pipe thread or sealant to the nozzle threading before hand tightening it into the nozzle fitting.
- Use an extended 22 mm socket wrench and carefully tighten the nozzle.

Operation

During a fire, the fluid in the fast response thermally actuated glass bulb will expand and shatter. The nozzle valve would then drop down, allowing the water to flow through the nozzle and suppress or extinguish the fire.

Maintenance

The nozzles must be handled carefully before, -under and -after installation. Nozzles that are damaged in any way, must be replaced. The nozzles shall not be painted, coated or otherwise altered after leaving the factory.

Notes

For a full description, please refer to the Design, Installation, Operation and Maintenance (DIOM) manual. A full training course is offered for the appropriate design, installation, operation and maintenance of Prevent Systems low pressure water mist automatic fire suppression systems.

Prevent Systems water mist nozzles are produced and tested to stringent in-house quality standards according to ISO 9001.

Revision history

Rev. 1.0 – April 2017

Rev. 2.0 – July 2018 – inclusion of commercial tests

Rev. 3.0 – June 2020 – adjustment k-factor testing

Rev. 4.0 – July 2024 – Part 1 and Part 2, LPCB certificate

Rev. 5.0 – September 2025 – Part 2 – reference to the EN 14972 series

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Part 2

The Prev5exp20 is designed and successfully tested for fixed water mist fire protection systems for use in Residential and Domestic applications, according to EN 14972-17 and BS 8458:2015 Annex C. This would include protection of homes, care institutions, apartment buildings, and sleeping areas in hospitals, hotels etc.

It has also been successfully tested for commercial low hazard occupancies in rooms up to a maximum of 20.25 m², according to EN 14972-7, cat. 3 and BS 8489-7, cat. 3, Clause 7.7. This would include protection of typical OH-1 areas such as offices, small classrooms, heritage including churches, and public areas in care institutions, hospitals, hotels, etc. not covered as residential or domestic areas.

Design

Each system shall be hydraulically designed according to the minimum water flows and water pressure, and the maximum allowable coverage area for the nozzles, as described below for the respective application. The system must meet the design requirements specified by the Authorities Having Jurisdiction (AHJ).

	Residential and domestic	Commercial low hazard
Max. coverage area	4.5m x 4.5m = 20.25m ²	Rooms ≤ 20.25m ²
Spacing between nozzles	Max. 4.5m, min. 2.25m	not applicable
Distance to wall*	Max. 2.25m, min. 0.1m	Max. 2.25m, min. 0.1m
Distance from ceiling	0 – 150mm	0 – 150mm
Maximum ceiling height**	3.5m	3.7m
Minimum operating pressure	2.2 bar	2.6 bar
Maximum operating pressure	16 bar	16 bar
Maximum standby pressure*	12 bar	12 bar
K-factor	31	31
Minimum flow rate	46 lpm	50 lpm
Minimum water density	2.27 mm/m ² /min	2.47 mm/m ² /min
Piping (non-corrosive)	Stainless steel, PrevPex, RedPipe, CPVC, subject to approval in each case.	

*Distance from walls can be exceeded in one direction by up to 20% if the other direction is reduced correspondingly, so that the maximum coverage area per nozzle does not exceed 20.25m².

**The Prev5exp20 nozzle can be installed up to a 3.5m ceiling height for Residential and domestic, and 3.7m for Commercial low hazard applications. For ceiling heights exceeding these heights, the Prev5exp nozzle is a good option.

The DIOM manual chapter 5 describes in detail the design requirements and limitations, nozzle spacing, positioning with respect to obstacles, ceiling slopes, etc. Chapter 6 covers hydraulic calculations.

Contact

For further information or for signing up for a training course, please contact us at post@prevent-systems.no or via our web-site www.prevent-systems.com.

Limited Warranty

10-year limited product warranty on Prevent Systems low pressure water mist nozzles.

The warranty shall cover:

This warranty applies to the full extent permitted by law. The warranty applies to the original buyer for 10 years from date of purchase against defects in material or production workmanship, and only if the nozzles are paid for in full, installed and maintained pursuant to Prevent Systems directions for installation and maintenance. Nozzles found to be defective shall be repaired or replaced by Prevent Systems. Prevent Systems will not cover any costs or obligations in connection with the sale, repair, or replacement without prior written agreement.

The warranty rights shall follow the building and shall apply to the person who can document that he/ she owns the building.

The warranty does not cover:

The warranty does not cover incorrect handling, storage, design or installation of the water mist nozzles. Prevent Systems shall not be liable for any indirect or consequential damages, including labor charges, and the liability shall not exceed the amount of the sales price.

Notification of claim:

Notification of claims which fall under this warranty shall be reported to Prevent Systems in writing without delay, so that immediate action to remedy the issue can be taken.

The rights of this warranty is a supplement to the additional rights of the buyer based on the legislation.