



# The First Responder Sprinkler (FRS)

**Unica Fire Safety**

Next generation sprinklers:  
First Responder Sprinkler (FRS)

# Sprinklerinstallation

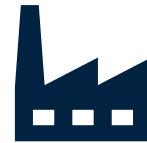
BENEFITS OF  
A SPRINKLER  
INSTALLATION

Fire sprinklers are not applied in every building (only 3% in Western Europe)  
Why is that, because there are so many benefits?



## LIFE SAFETY

Fire sprinklers  
save lives



## EFFECTIVE INSTALLATION

Fire sprinkler system is an  
effective way to increase the fire  
safety of buildings



## MINIMIZE FIRE DAMAGE

Fire sprinklers help to  
minimize fire damage and  
contributes to business  
continuity

# Limitations Sprinklerinstallations



## IMPACT BUILDING

A sprinkler has too much impact on a building



## POWER/WATER

A sprinkler requires too much power and water



## WATERDAMAGE

A sprinkler causes too much water damage

# Solution: First Responder Sprinkler

Earlier and smarter fire detection and  
Earlier and smarter responses

Results in:

- = less water
- = less water damage
- = less heavy installation

## 5 principles of the First Responder Sprinkler



Combination of approved and existing sprinkler and fire detection technology



Network of intelligent temperature sensors



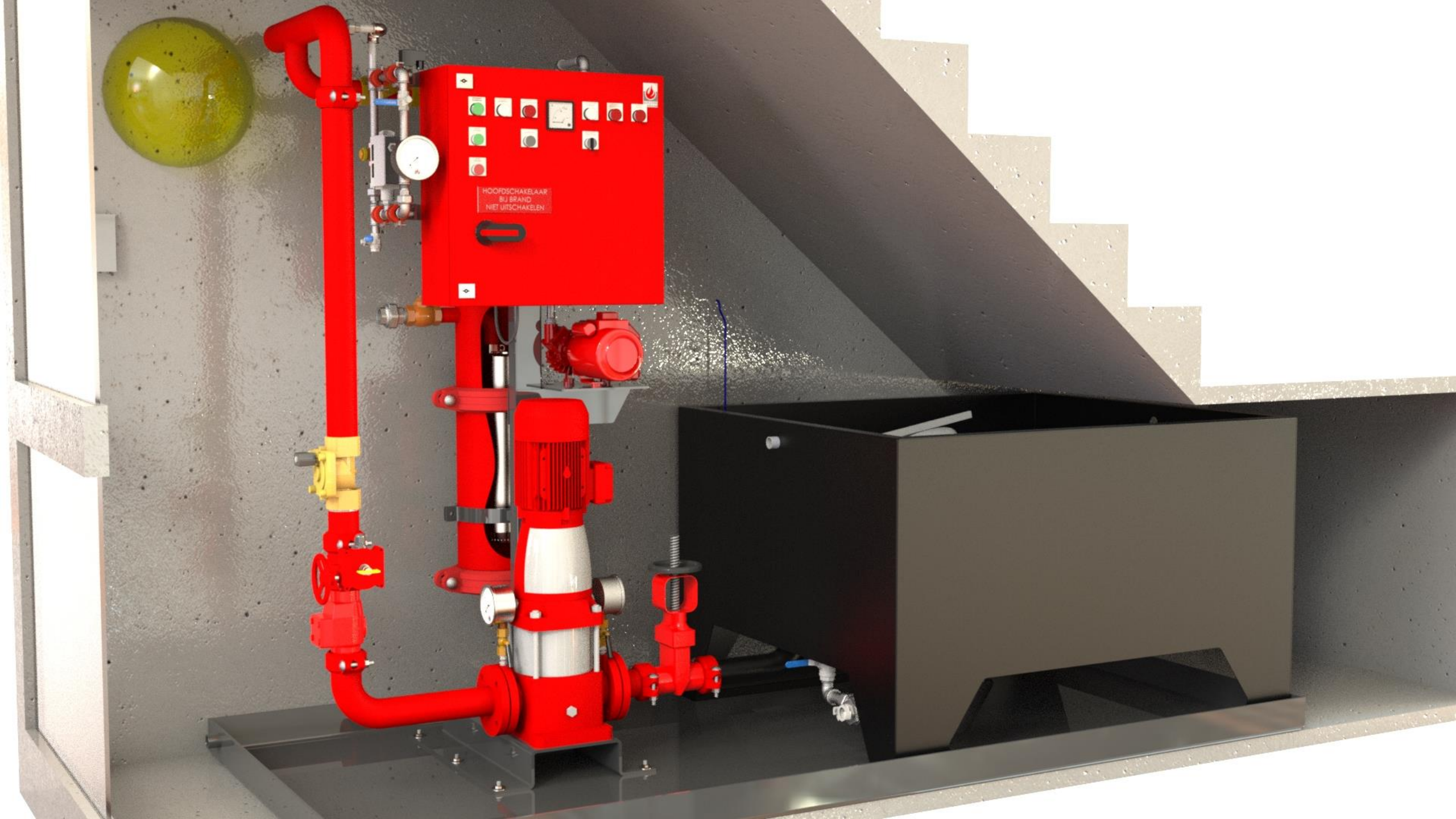
Can determine the exact location of the fire and interacts



Dry system supervised by underpressure



Fire Safety engineered automatic fire suppression system



HOOFDSCHAKELAAR  
BIJ BRAND  
NIET UITSCHAKELLEN



# First Responder Sprinkler (FRS)

BENEFITS OF  
THE FIRST  
RESPONDER  
SPRINKLER

This concept offers major benefits in comparison to a traditional sprinkler system



## FIRE DETECTION

Quick fire detection and a more efficient extinguishing result in a smaller water requirement.



## WATER DAMAGE

The system minimizes collateral water damage by automatically closing after extinguishment.



## DRY PIPEWORK

The First Responder Sprinkler system uses dry pipework to minimize corrosion issues.



## INTERACTIVE

The First Responder Sprinkler is the system which continuously adapts to the fire



## ONE SYSTEM

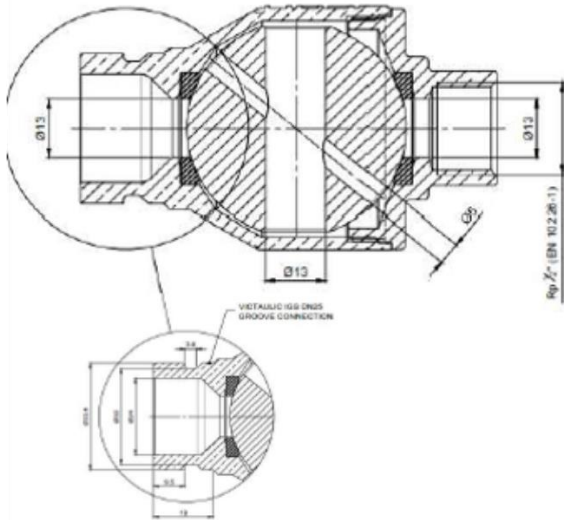
Sprinkler and low-pressure water mist are combined in one system!

AND ...

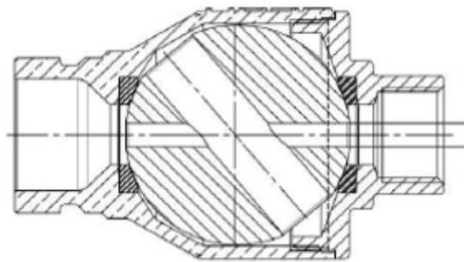
**HOW?!**

# Sprinkler Ball Valve Design

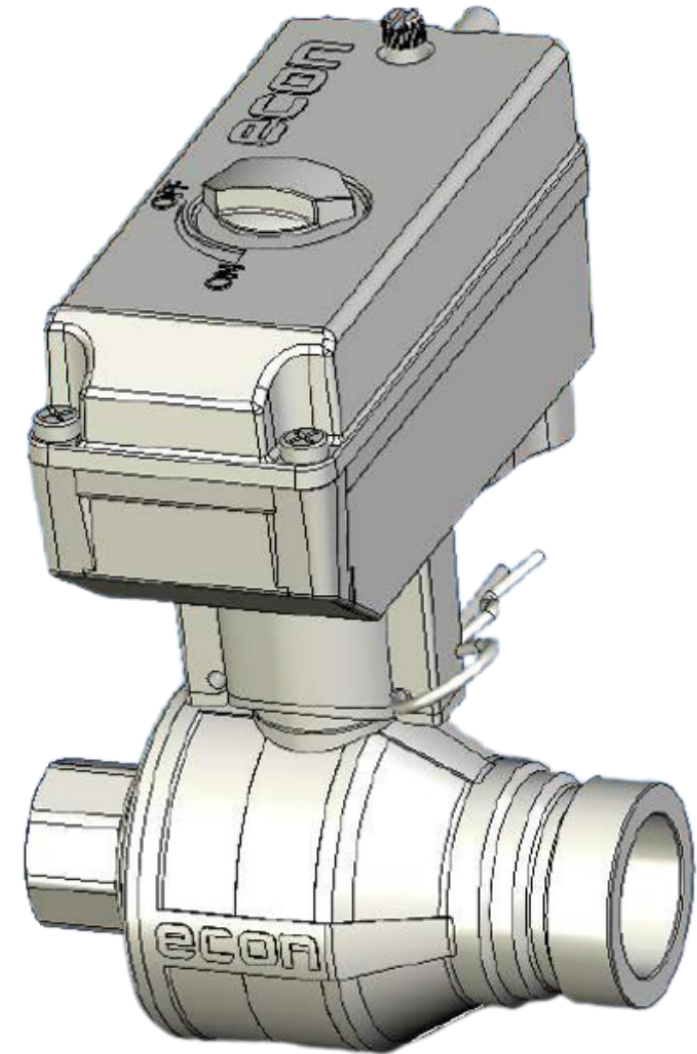
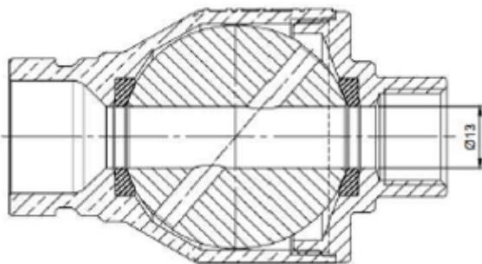
Valve closed Rotation 0°



**3 SECONDS**  
Open  $\varnothing 5$  Rotation -40°

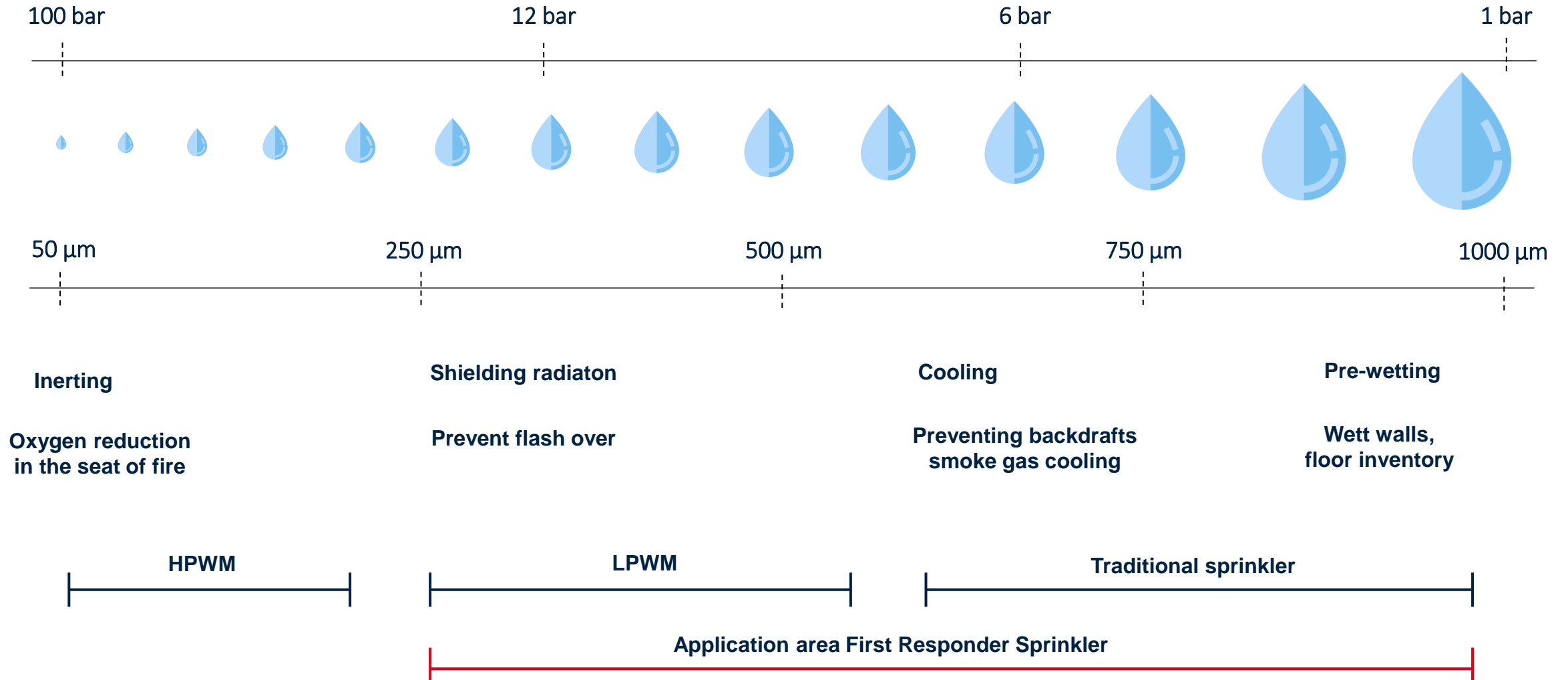


**4 SECONDS**  
Open  $\varnothing 13$  Rotation 90°



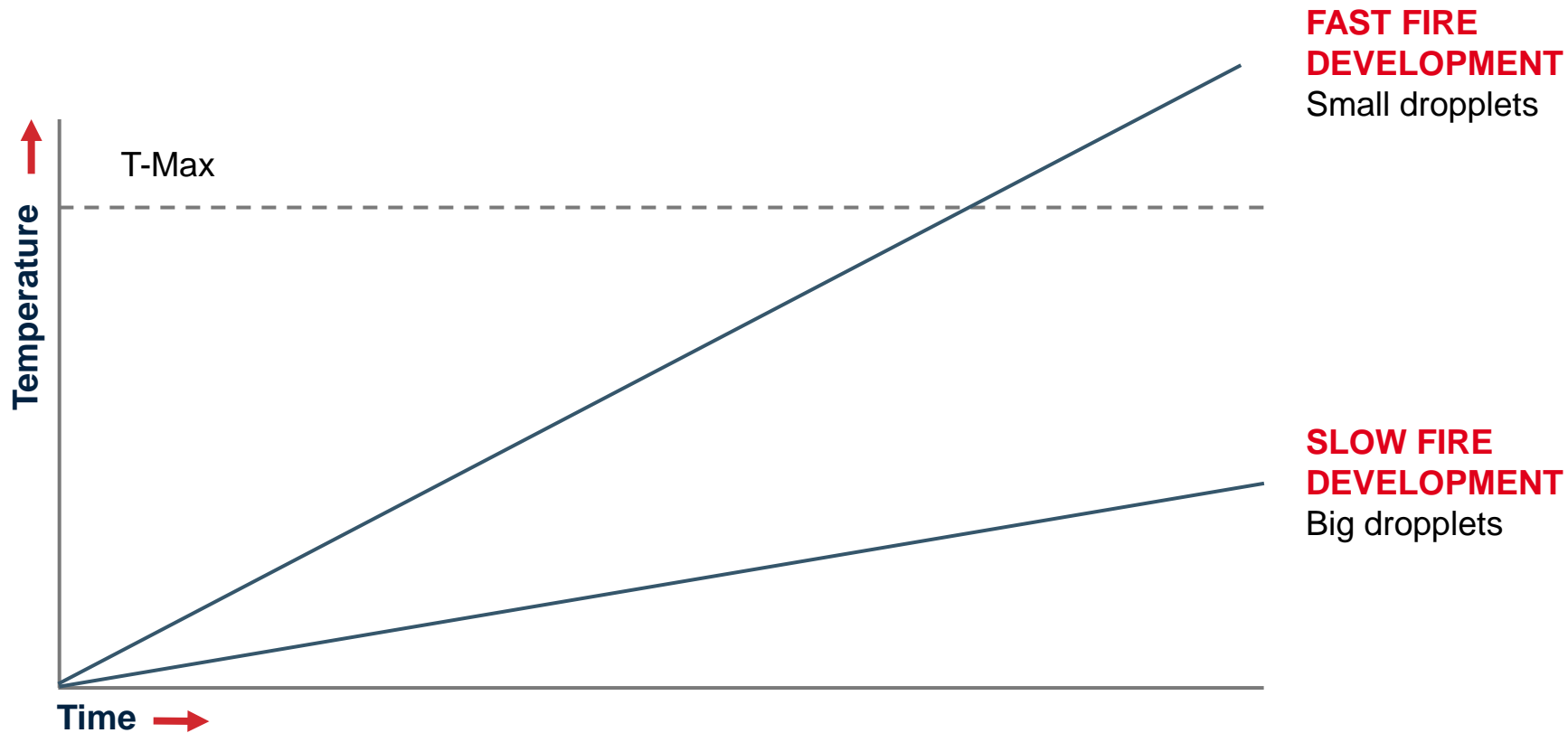


# Sprinkler vs. First Responder Sprinkler



# Principle First Responder Sprinkler

Non storage solutions: Varying K-factor



## Algorithms by



Thermo  
max and



Thermo  
differential  
detection



Option for  
Life safety:  
smoke  
detection

# Patent: First Responder Sprinkler

01

## PATENT

The First Responder Sprinkler has patented by the world intellectual property organization: International bureau

02

## INTERNATIONAL PUBLICATION DATE

24 January 2019 (24-01-2019)

03

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
24 January 2019 (24.01.2019)



(10) International Publication Number  
**WO 2019/017782 A1**



# The Sprinkler Integrity Test (SIT)

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Unica Fire Safety

Next generation sprinklers:  
Sprinkler Integrity Test (SIT)

# What is the Sprinkler Integrity Test (SIT)?

01

Innovative method to test the functionality of fire sprinklers on-site

02

Mobile test device that is placed over the fire sprinkler

03

Special software and a professional heater

04

Check whether the sprinkler activates at the design temperature and design response time and also whether sufficient water comes out (K-factor)

# Sprinkler Integrity Test (SIT)

BENEFITS OF  
THE SIT TEST  
ON LOCATION

Method for testing sprinklers on a live project location



## REALIBLE METHOD

Most realistic impression of the performance of the sprinkler systems



## OBJECTIVE ASSESSMENT

The sprinkler system is tested as a whole, in its original environment.



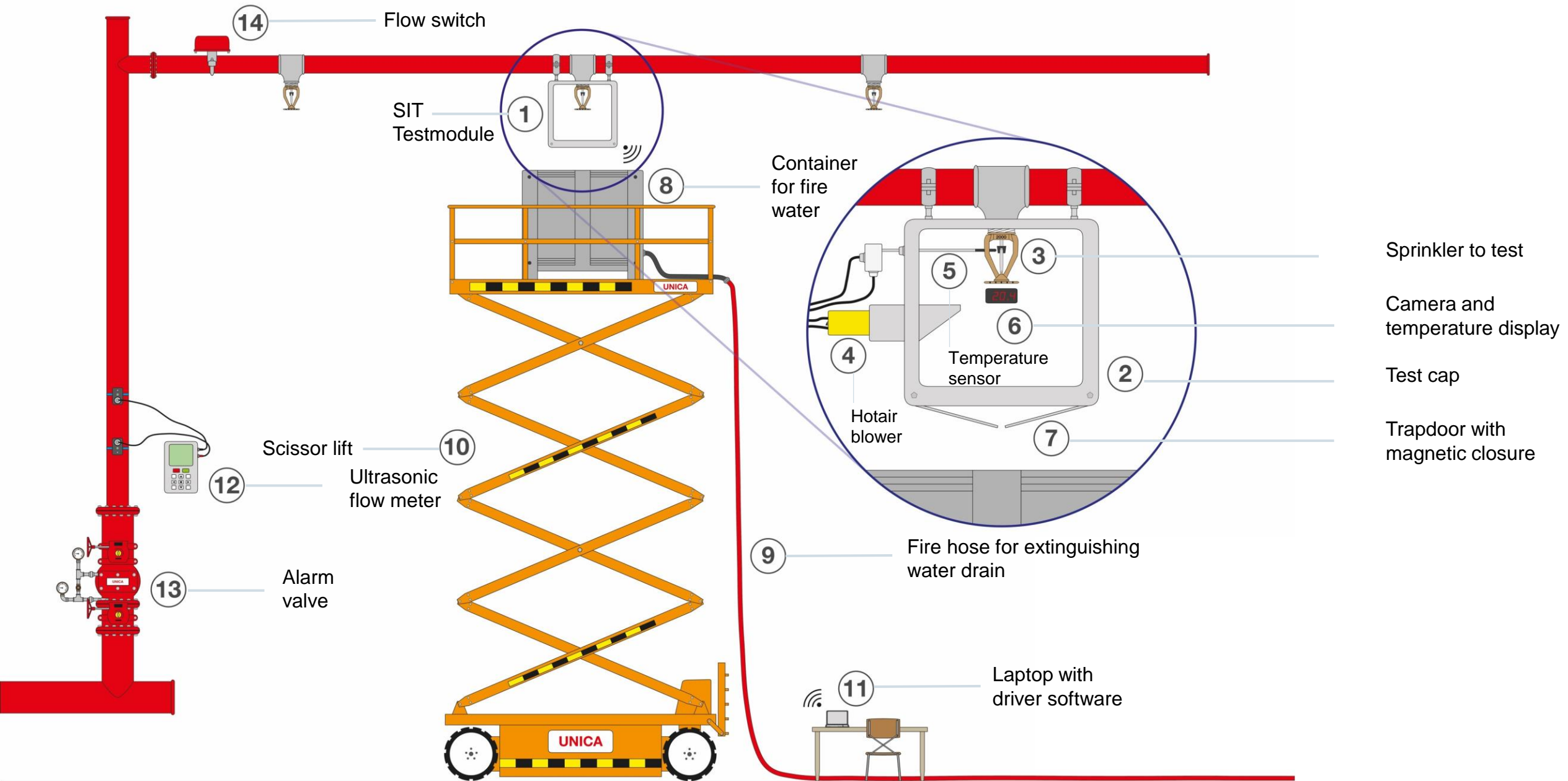
## LIFE TEST

Building owners can watch the SIT test live. The results are immediately visible



## TO COMBIMATE

The SIT can be combined with the mandatory periodic pipe inspection





Unica Fire  
Safety offers  
high quality fire  
protection  
solutions

# Thank you for your attention

Questions?

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