MORITA

MORITA GROUP

Liquid agent package type automatic fire extinguishing equipment

SPRINEX

Morita Miyata Corporation

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1. What is SPRINEX?

SPRINEX is a ***liquid agent package type automatic fire extinguishing equipment*** which was devised and developed as lessons from a catastrophic fire occurred at special elderly nursing home in 1987 in Japan.

In 1988, **SPRINEX** was approved by Japanese government as only equipment which had fire safety performance equal to or superior than traditional sprinkler system.

Since then **SPRINEX** has been officially recognized and used as an alternative of sprinkler system.

■ *Catastrophic fire at special elderly nursing home, named Shoju-en, occurred on June 6th in 1987*

Fire from linen room on second floor killed 17 elder people and 25 people injured out of 74 residents.

2. SPRINEX 3-step automatic fire extinguishing

Step 1

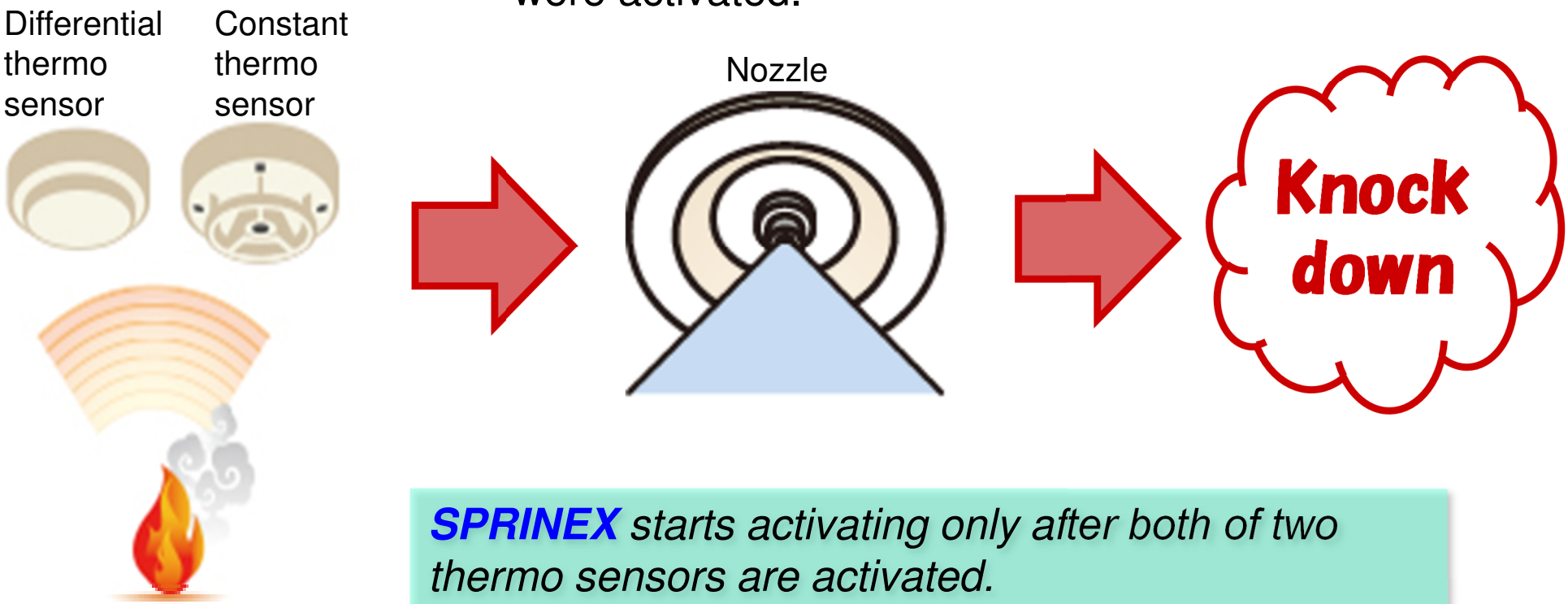
Two types of thermo sensor are activated by heat comes from fire.
Alarm signal from both sensors go to control unit to activate system.

Step 2

After receiving signals, system controller starts activating to release fire extinguishing agent to be discharged from all nozzles installed in the line/zone where sensors were activated.

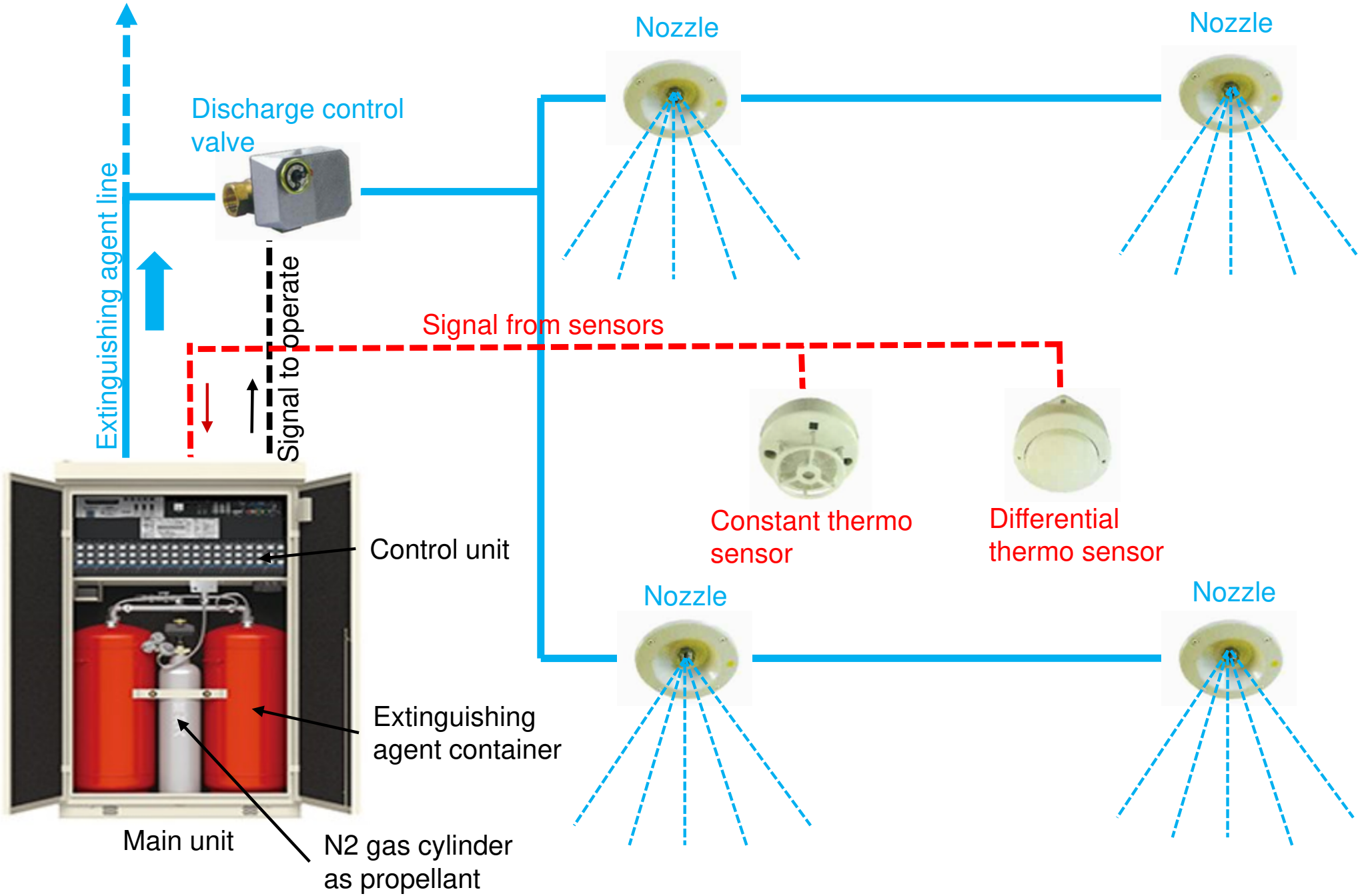
Step 3

Fire extinguishing agent continues to be discharged for 90-150 seconds in **SPRINEX** and 20-30 sec. in **SPRINEX Mini** to knock down fire.



SPRINEX *starts activating only after both of two thermo sensors are activated.*

3. SPRINEX system configuration



4. SPRINEX fleet

●SPRINEX

Integrated control multiple-line fire extinguishing system for building.
Can be used at various scene such as; hotels, dormitories, apartments, hospitals, social welfare facilities, kindergartens, schools for disabled students, group homes……..
Main unit can be installed inside or outside of building.
Each system line covers floor area up to 13m^2 or 21m^2 depending upon extinguishing agent capacity.

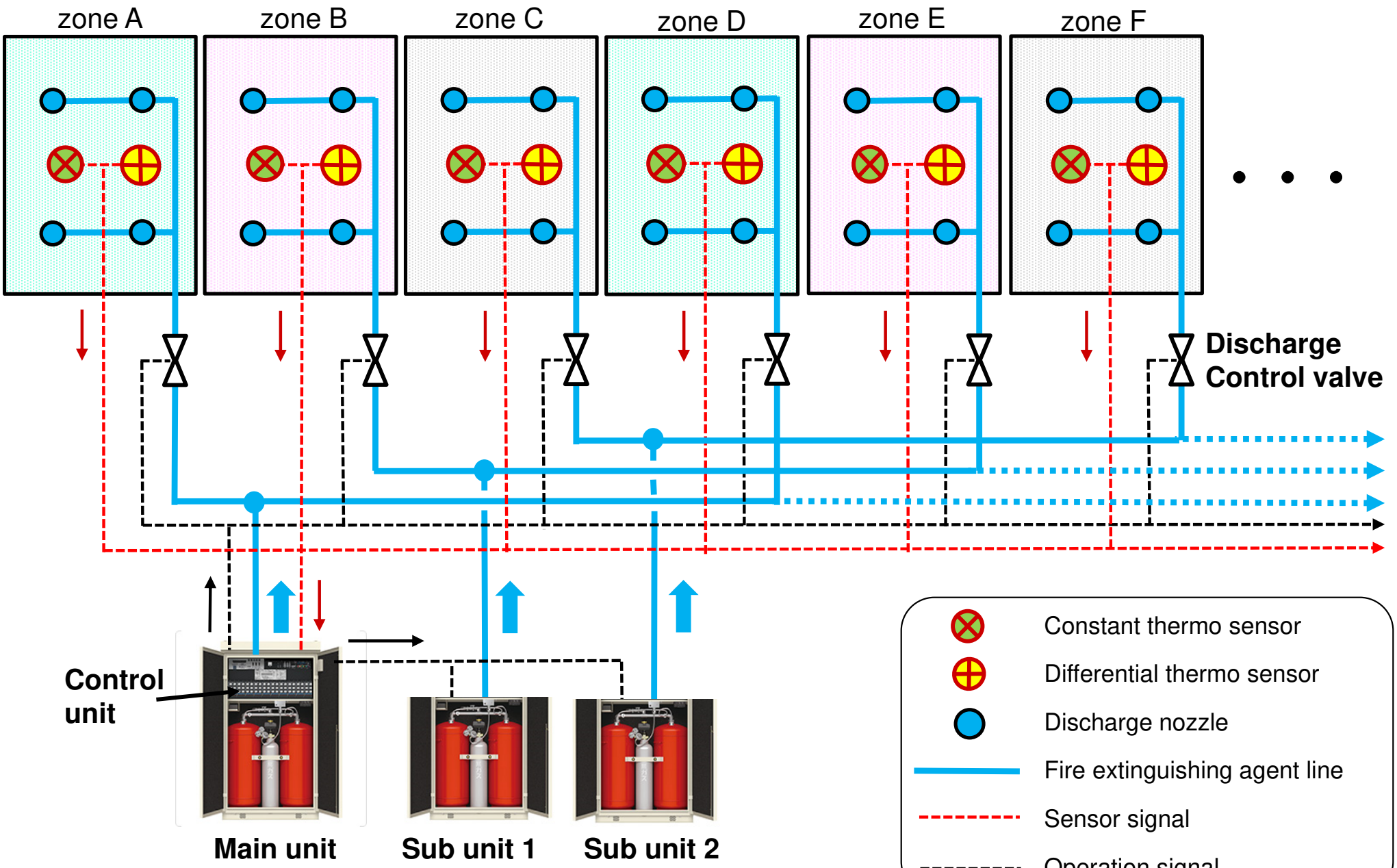
●SPRINEX mini

Independent stand-alone single-line fire extinguishing unit
installed indoors, room by room or zone by zone, for smaller area.
Each unit covers floor area up to 13m^2.
Easy and simple to install.
4 types variation according to installation and application.

*Both **SPRINEX** and **SPRINEX mini** can be installed not only for new construction but also for existing building.*

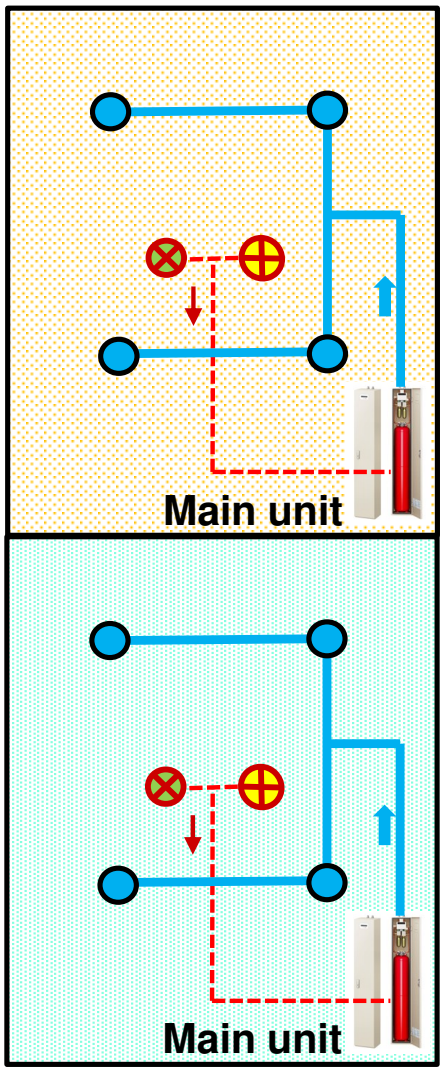
5. SPRINEX system image

Floor area of each zone =< 21m²



Each unit contains 108L or 216L of fire extinguishing agent

6. SPRINEX mini system image

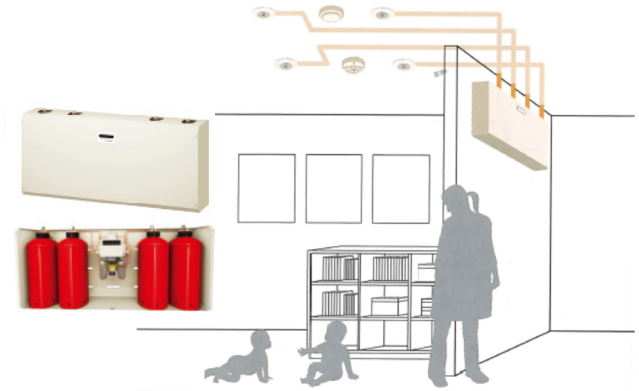


Constant thermo sensor
Differential thermo sensor
Discharge nozzle
Fire extinguishing agent line
Sensor signal

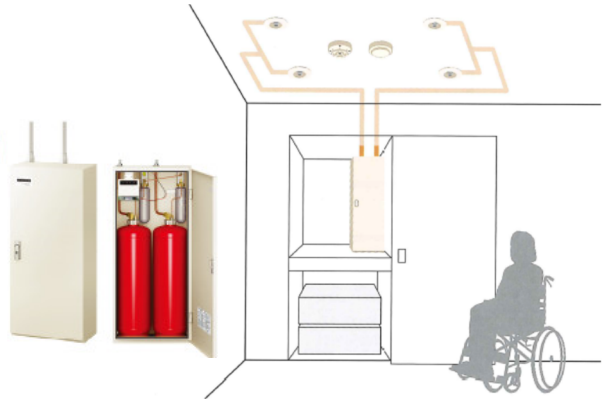
Floor area of each zone =< 13m²

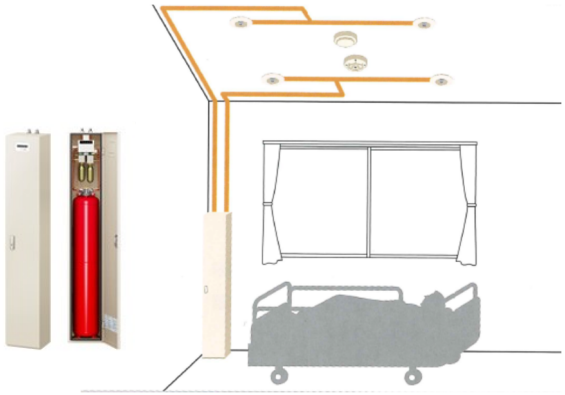
4 types of variation

Wall mount
(Agent : 16L)



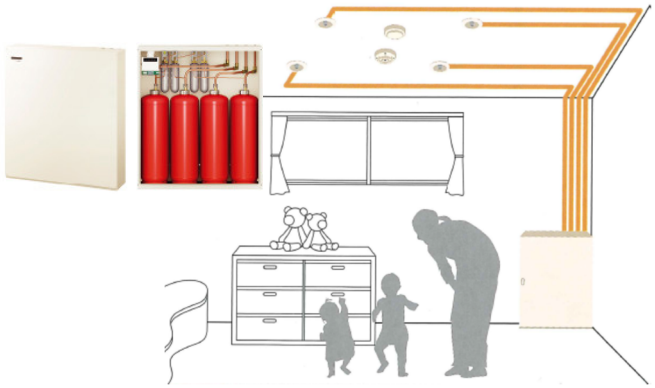
Closet storage
(Agent : 18L)





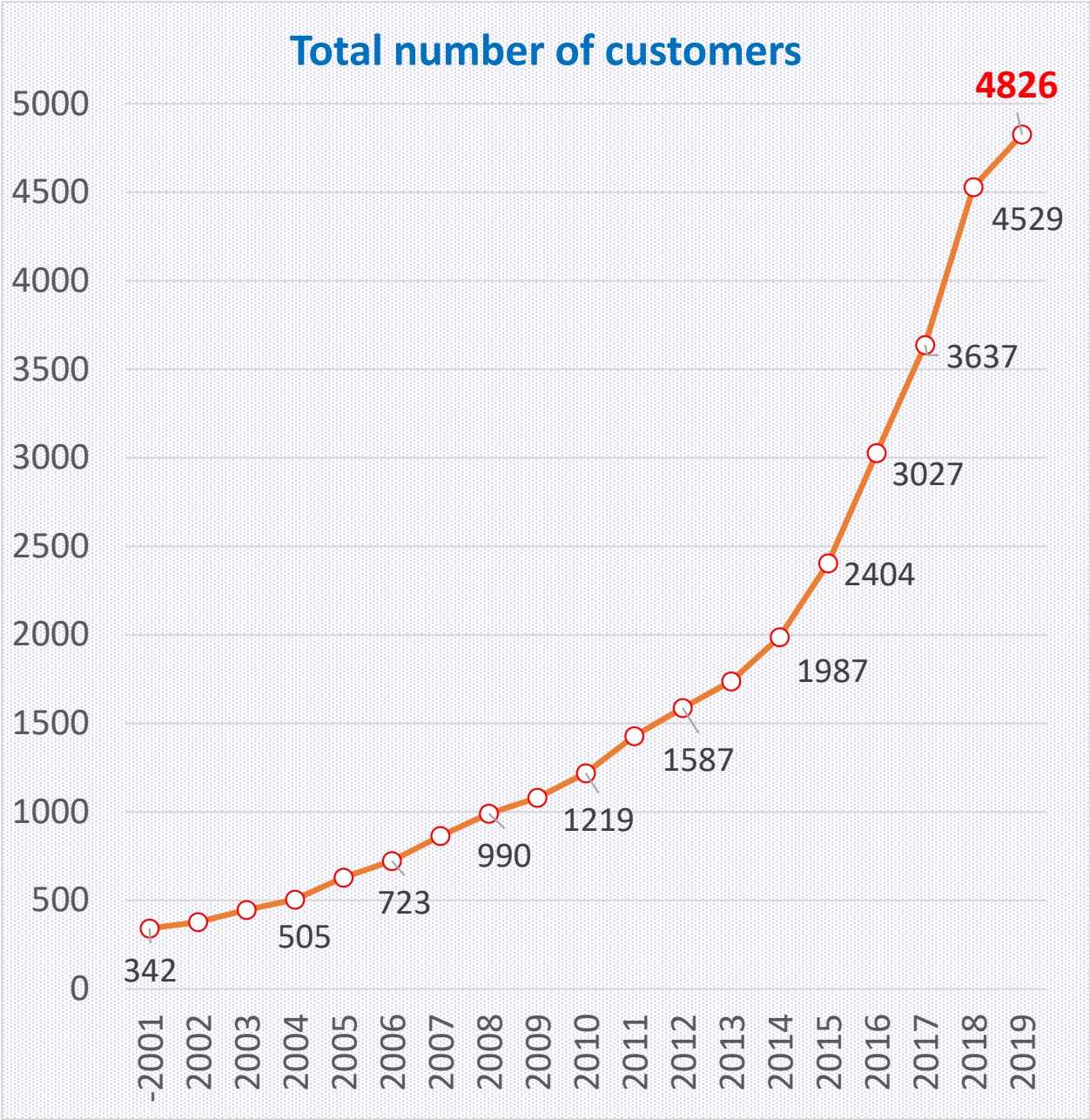
Corner install
(Agent : 16L)

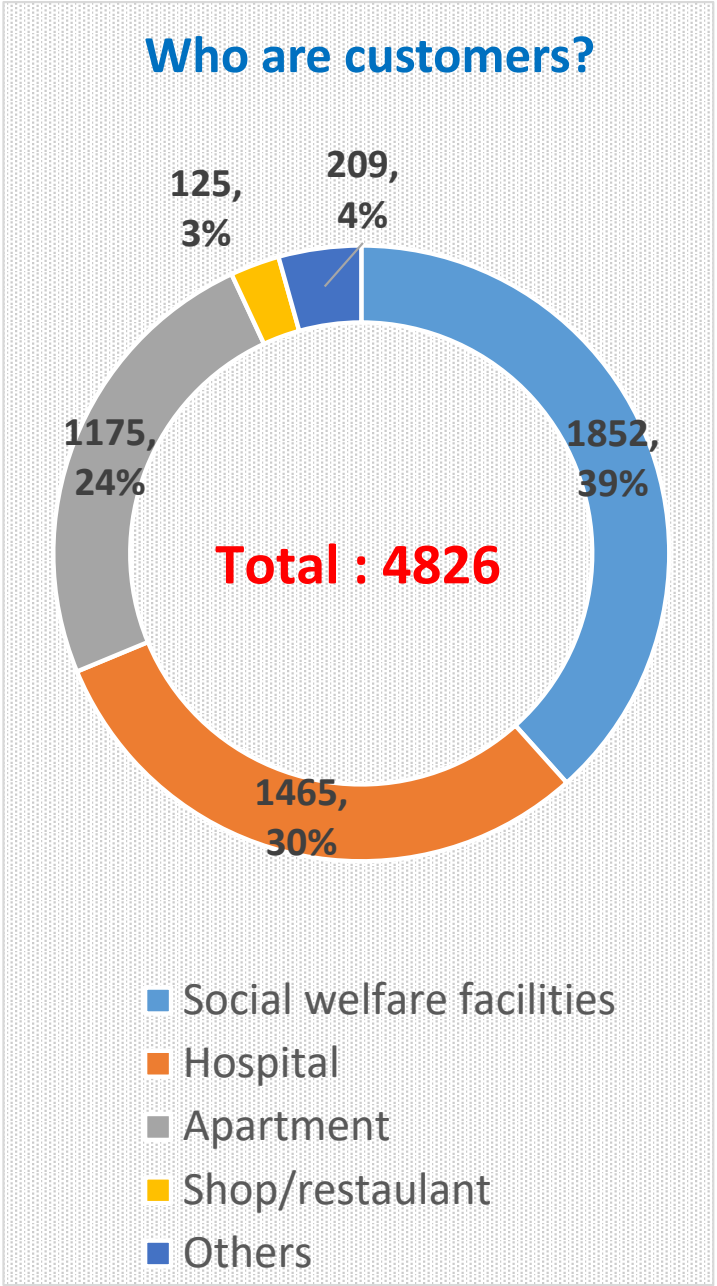
For Non-combustible material interior



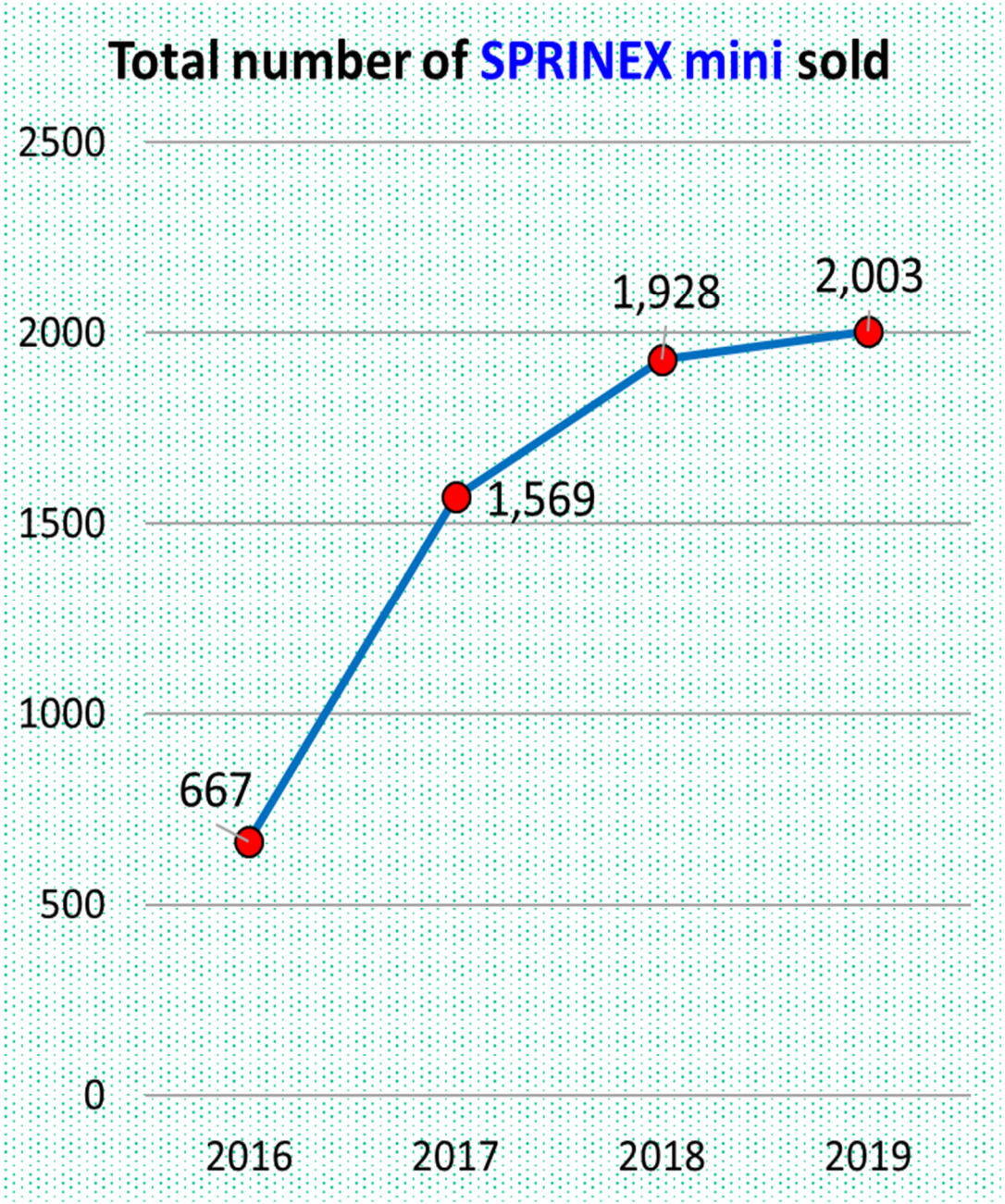
Floor standing
(Agent : 36L)

7. SPRINEX sales achievement in Japan





8. SPRINEX mini sales achievement in Japan



SPRINEX mini was developed as compact model of **SPRINEX** by end of 2015, and its sales started from 2016.

Originally major sales target of **SPRINEX mini** was small-scale social welfare facilities, and total sales number of it reached to more than 1500 units within 2 years.

According to official change of fire prevention regulation in Japan in 2018, **SPRINEX** replaced **SPRINEX mini** in such market.

Now **SPRINEX mini** is trying to penetrate into new market such as cultural assets, workplace……

9. Advantage of SPRINEX comparing with sprinkler system

1. *Easier installation & space saving*
2. *Quicker and securer fire detection*
3. *Higher fire extinguishing performance*
4. *Less secondary damage*
5. *Stronger & tougher for accidents*
6. *Easier maintenance*

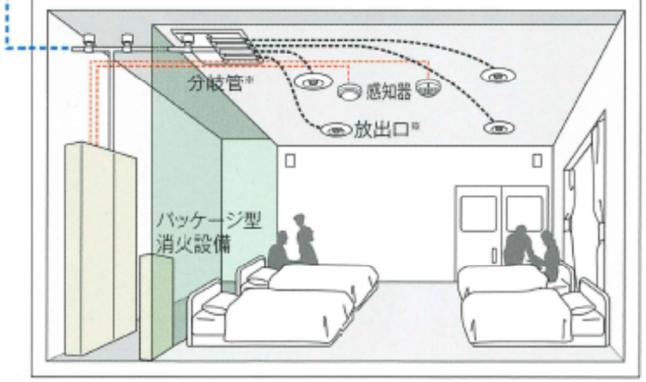
9. Advantage of SPRINEX comparing with sprinkler system

9-1. Easier installation & space saving

SPRINEX can be retrofitted to existing building because of taking less space and simpler system configuration comparing with traditional sprinkler system.

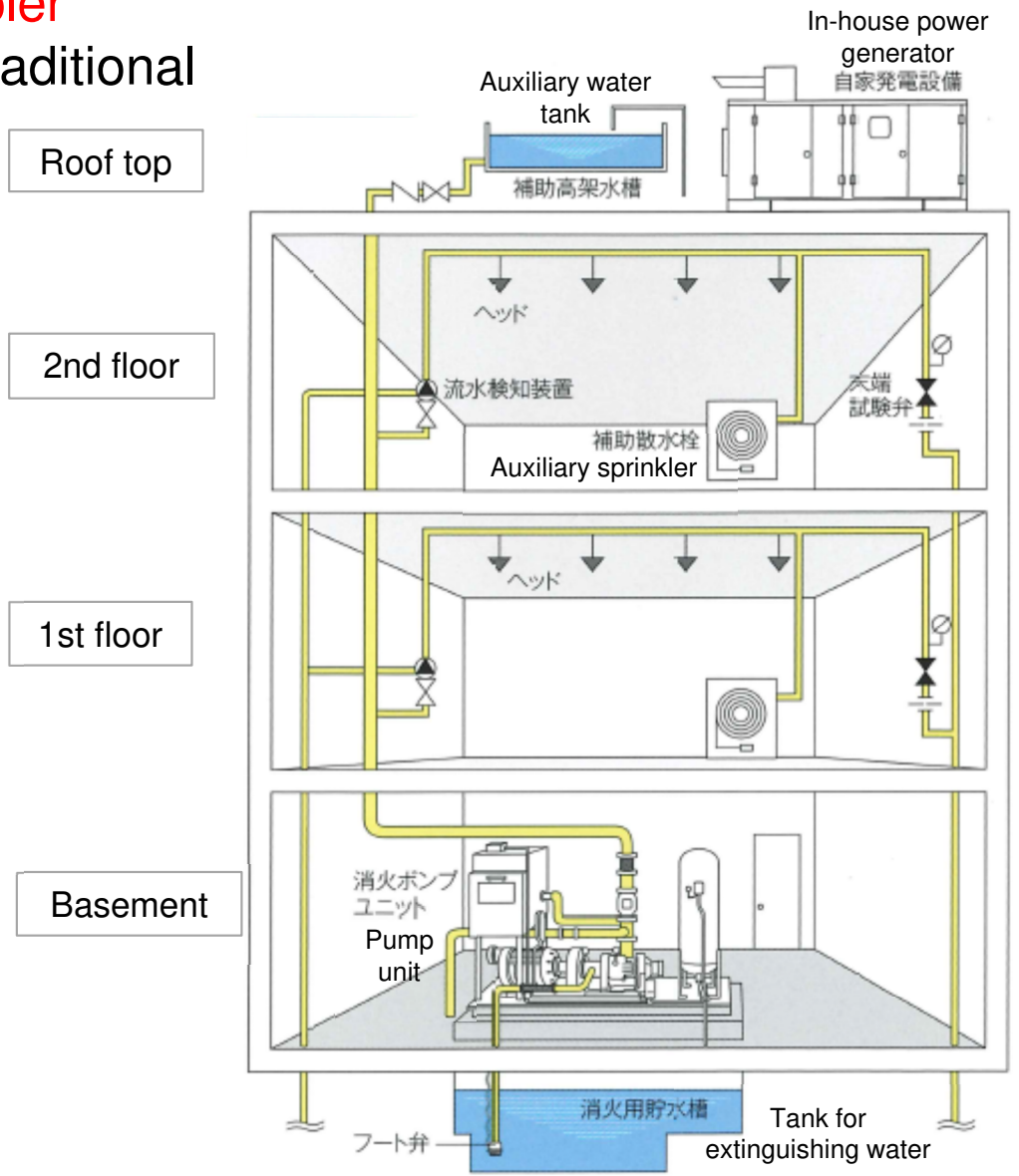
SPRINEX

No need to take care about location of main unit. Easy installation, 2 hours per room, because of smaller piping and simple configuration.



VS

Sprinkler system



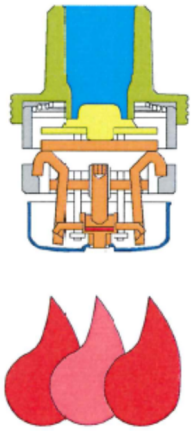
9. Advantage of SPRINEX comparing with sprinkler system

9-2. Quicker and securer fire detection

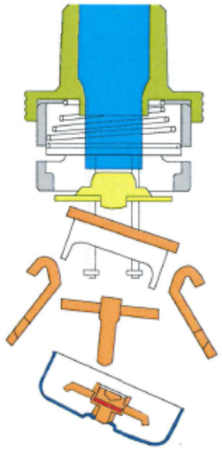
Thanks to using thermo sensors, **SPRINEX** can detect smaller fire and discharge agent much quicker than wet type sprinkler system which uses traditional thermal decomposition type sprinkler head.

Thermal decomposition sprinkler head requires longer time to activate

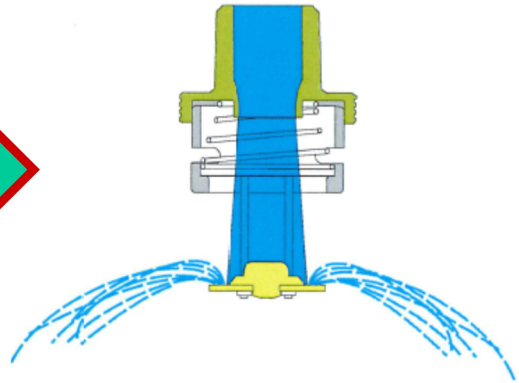
Sprinkler head is heated by fire



It takes time to break lower part of sprinkler head by heat.



Water pushes out valve downward to discharge.



For safety sake, two types of thermo sensor; constant type and differential one, are used in **SPRINEX** to detect fire.
System is activated only after both two sensors send alarm signal to control panel, so to prevent malfunction of system.

Constant thermo sensor

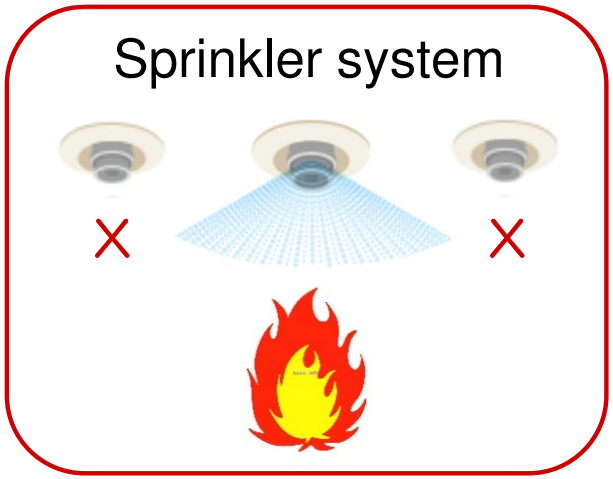
+

Differential thermo sensor

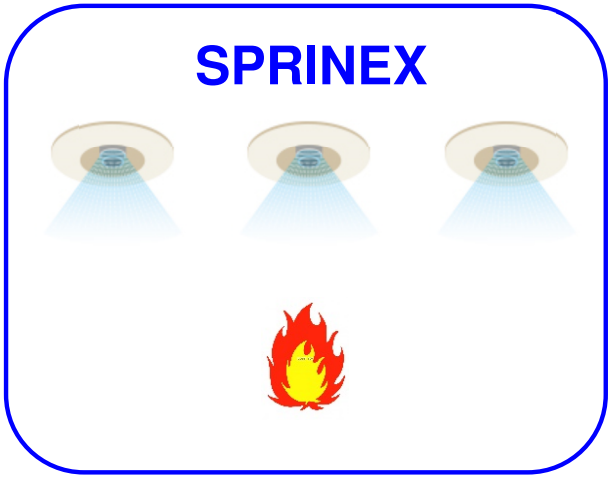
9-3. Higher fire extinguishing performance

Fire extinguishing agent of **SPRINEX** has very good characteristic in cooling, penetrability and prevention of relapse, and finally it has fire extinguishing performance of **4 times** that of water.

In sprinkler system which uses thermal decomposition sprinkler head, if one of nozzle heads starts discharging water, other nozzle heads may not activate because of cooling (heat suppression) effect by water discharged from first opening nozzle head. This fact tells us that it takes long time to extinguish fire or in the worst case fire can not be extinguished completely by sprinkler system.



On the other hand, extinguishing agent in **SPRINEX** system is discharged from all nozzles simultaneously which are installed in same line/zone, and this fact realizes much quicker and securer knockdown of fire, comparing with sprinkler system.



9. Advantage of SPRINEX comparing with sprinkler system

9-4. Less secondary damage

1) Less water damage after knockdown by using smaller volume of fire extinguishing agent comparing with sprinkler system.
Discharge volume of agent is only **216 L** in **SPRINEX** and **16 – 36 L** in **SPRINEX mini**, much smaller than approx. 2400 L[1)] in sprinkler system which causes a lot of water damage for furniture in room and/or other downstairs room.

[1)] in case of 20 minutes water discharge from one nozzle

2) Less smoke generated during fire extinguishing by **SPRINEX**, because of shorter time to knockdown of fire.
This fact reduces risk of carbon monoxide poisoning for human and also visibility obstruction during evacuation.

3) Safety of fire extinguishing agent to human body
Extinguishing agent of **SPRINEX** (PH6.5) is tested and approved by *Japan food analysis center* regarding its safety to human body such as skin or eyes.

9. Advantage of SPRINEX comparing with sprinkler system

9-5. Stronger & tougher for accidents

1) No adverse effect by water outage
Different from sprinkler system, by containing its own fire extinguishing agent in the system, **SPRINEX** is not affected by water interruption/outage.

2) No freezing
Different from sprinkler system, no need to worry about freezing in **SPRINEX** because piping is always dry and also separate from tap water line.

3) No adverse effect by blackout (**SPRINEX mini**)
As operated by its own lithium batteries, **SPRINEX mini** is not affected by blackout.

4) Stronger for earthquake
By using smaller/lighter and dry type piping comparing with wet type sprinkler system, **SPRINEX** has less damage in case of earthquake.

9. Advantage of SPRINEX comparing with sprinkler system

9-6. Easier maintenance

SPRINEX

No need any extensive maintenance except periodic operation check of thermo sensors.

Cost saving

Differential thermo sensor

Constant thermo sensor

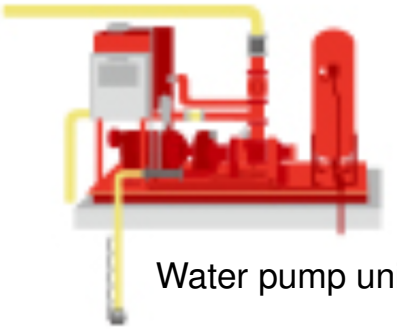
VS

Sprinkler system

Periodical special/intensive care and check required for major equipment such as water pump, water tank, in-house generator …

Valves

In-house generator



Water pump unit

10. SPRINEX success report

*Over 25 years from 1994, totally 23 cases have been reported from our customers as actual activation of **SPRINEX** in Japan, and reports say in all cases fire was quickly knock downed and as a result of that fortunately human and property damage was minimized.*





*Fire scene after extinguishing proves power and effectiveness of **SPRINEX**.*

11. SPRINEX into new market

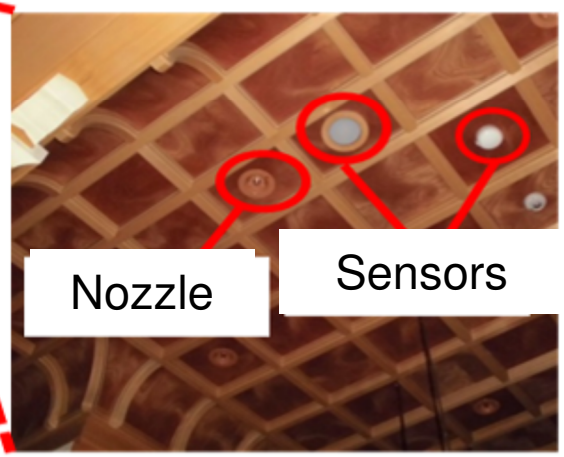
SPRINEX for protection of cultural assets

*A **temple** in Osaka area selected **SPRINEX** for its fire prevention, instead of sprinkler system from point of view of;*

- *Higher fire extinguishing performance*
- *Space saving*
- *Less secondary damage*
- *Safe agent*
- *Quicker & securer fire detection*

Installation of main unit

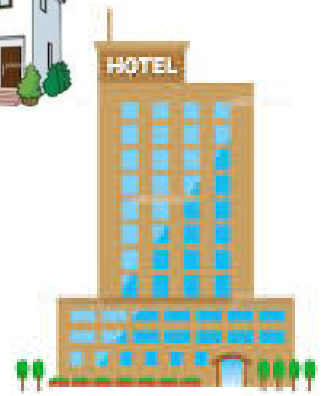
Installation on ceiling



11. SPRINEX into new market

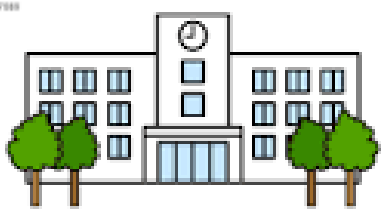
Possible customers of **SPRINEX** and **SPRINEX mini**

- Hotel, Dormitory, Share house, Apartment, Private house…



- Hospital, Social welfare facility, Group home…

- Kindergartens, Schools for disabled students…



- Cabaret, Dance hall, Night club, Karaoke club…

- Temple, Shrine…

- Small factory, Workshop, Workspace, Studio, Warehouse…

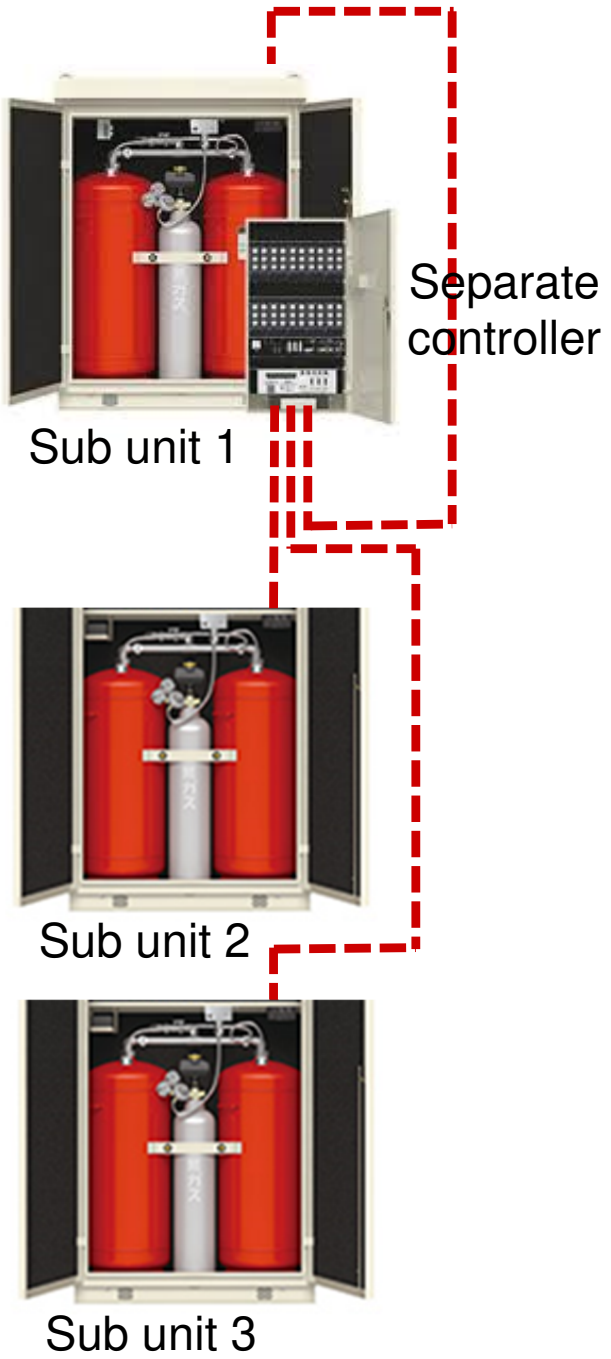
12. SPRINEX technical data

1) SPRINEX (FSSM500Ⅳ)

Specifications

Authorization number in Japan	PGA-006
Model	FSSM500Ⅳ
Type	Separate controller multiple-line type
Number of sub unit for 1 controller	Max. 3 units
Capacity of fire extinguishing agent	216 L / each sub unit
Max. covering line	50-line/125-line/175-line
Covering floor area	21m^2/each line
Number of discarge nozzle in each line	4 pcs or 9 pcs
Agent discharge time	Approx. 140 sec
External electric power	AC100V

Dimension & weight	Type	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Controller	50-line	550	211	960	51
	125-line	550	211	1800	85
	175-line	1065	211	1436	115
Sub unit	Indoor	1050	450	1350	480
	Outdoor	1087	560	1454	540



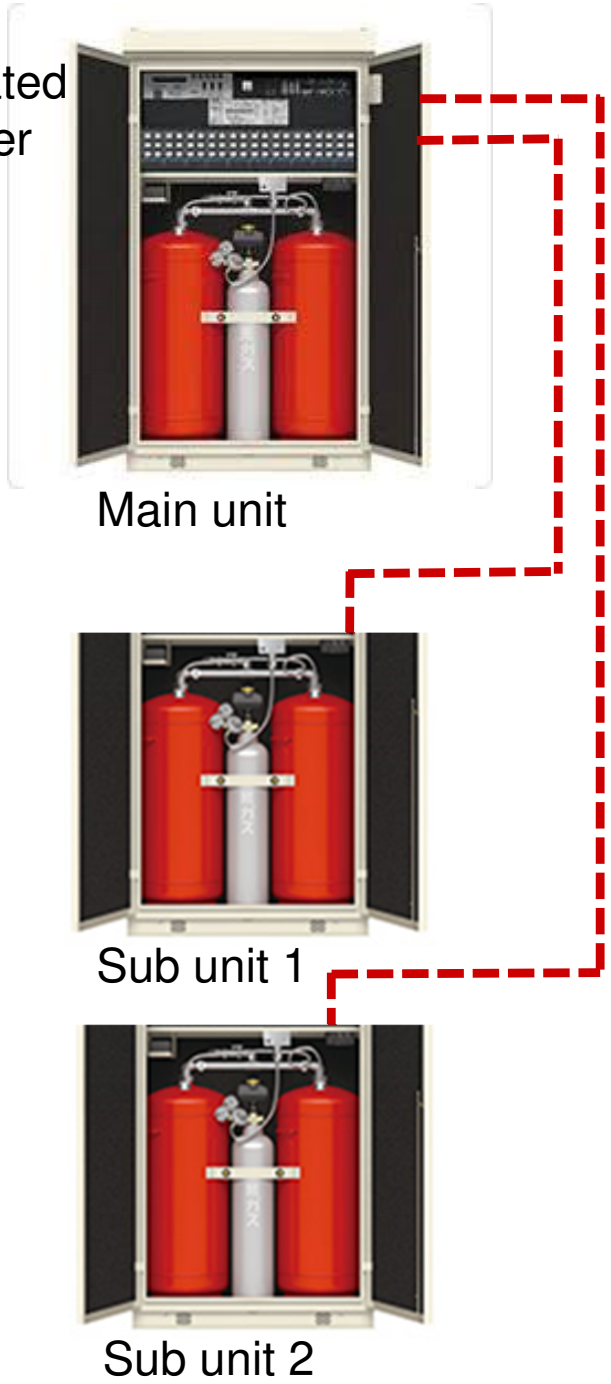
12. SPRINEX technical data

2) SPRINEX (FSSM500Ⅳ)

Specifications

Authorization number in Japan	PGA-006
Model	FSSM500Ⅳ
Type	Incorporated controller multiple-line type
Number of sub unit for 1 main unit	Max. 2 units
Capacity of fire extinguishing agent	216 L / each unit
Max. covering line	50-line
Covering floor area	21m^2/each line
Number of discarge nozzle in each line	4 pcs or 9 pcs
Agent discharge time	Approx. 140 sec
External electric power	AC100V

Dimension & weight	Type	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Main unit	Indoor	1050	450	1800	540
	Outdoor	1087	560	1910	610
Sub unit	Indoor	1050	450	1350	480
	Outdoor	1087	560	1454	540



12. SPRINEX technical data

3) SPRINEX (FSSM013H)

Specifications

Authorization number in Japan	PGA-008
Model	FSSM013H
Type	Independent multiple-line type
Capacity of fire extinguishing agent	108 L
Max. covering line	30-line
Covering floor area	13m^2/each line
Number of discarge nozzle in each line	4 pcs
Agent discharge time	Approx. 60 sec
External electric power	AC100V

Dimension & weight	Type	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Unit	Indoor	720	560	2000	350

Integrated controller

Unit

12. SPRINEX technical data

4) SPRINEX mini

Specifications

Authorization number in Japan	PGA-001	PGA-002	PGA-017	PGA-009
Model	CPW13044	CPW13092	CPW13161B	CPW13094
Installation (indoor)	Wall mount	Closet storage	Corner install	Floor standing
Type	Independent stand-alone single-line type			
Capacity of fire extinguishing agent	16 L	18 L	16 L	36 L
Covering floor area	$13m^2$			
Number of discarge nozzle	4 pcs			
Agent discharge time	Approx. 18 sec	Approx. 28 sec	Approx. 31 sec	Approx. 28 sec
External electric power	No need because of self-contained battery			

Dimension & weight	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
CPW13044	900	180	400	43
CPW13092	380	205	830	44
CPW13161B	230	205	1400	42
CPW13094	734	195	830	87

CPW13044 

CPW13092 

CPW13161B 

CPW13094 

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Thank you for your attention