

FIRE KIMM



AUTOMATIC FIRE EXTINGUISHING SYSTEM FIREKIM

5

TECHNOLOGY

- Smart Capsule
- Eco-Friendly Agent
- Innovative Design

10

PRODUCT

- Stick
- Sensor +
- Red Block

23

APPLICATION

- House & Market
- Industrial facility
- Population density facility

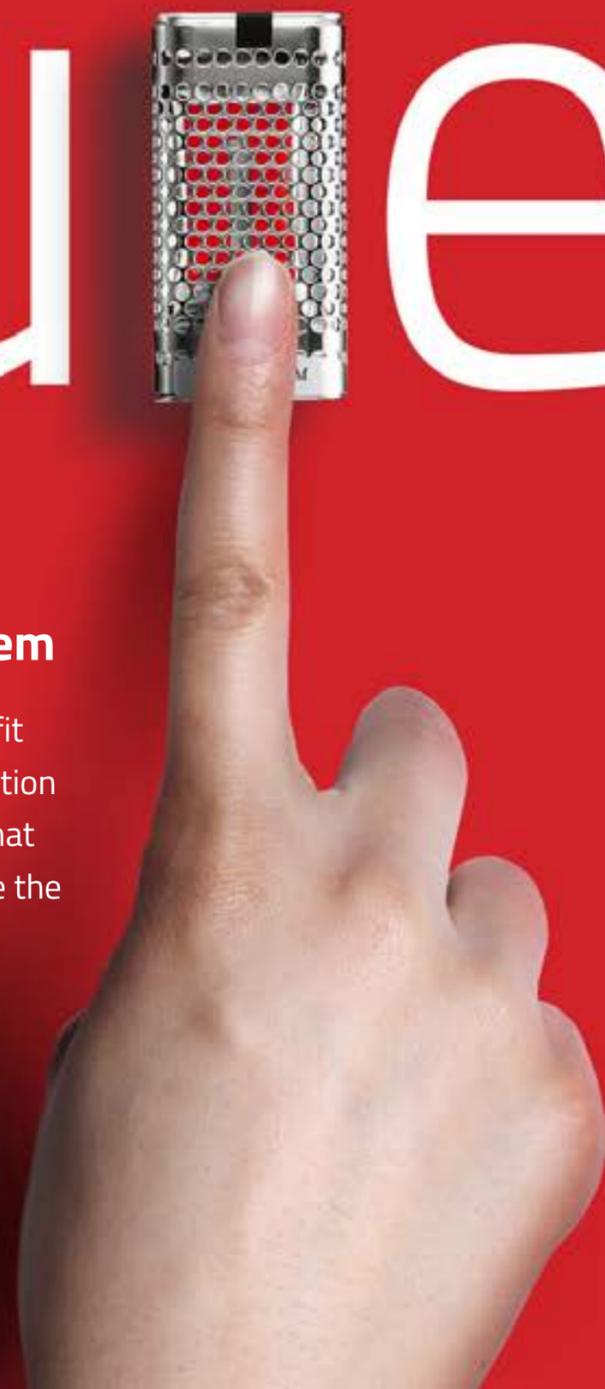
27

COMPANY

- Overview
- History
- Certificate
- Global Network



Unique



The world's leading unique automatic fire extinguishing system

This is an innovative fire prevention system that comes in various sizes, including forms to fit in the palm of your hand, and is suitable for many different purposes, installed in fire protection blind spots to snuff out major fires in advance. This is a smart automatic fire extinguisher that operates without requiring a separate power source, as the fire extinguishing capsule inside the product automatically detects temperature changes.

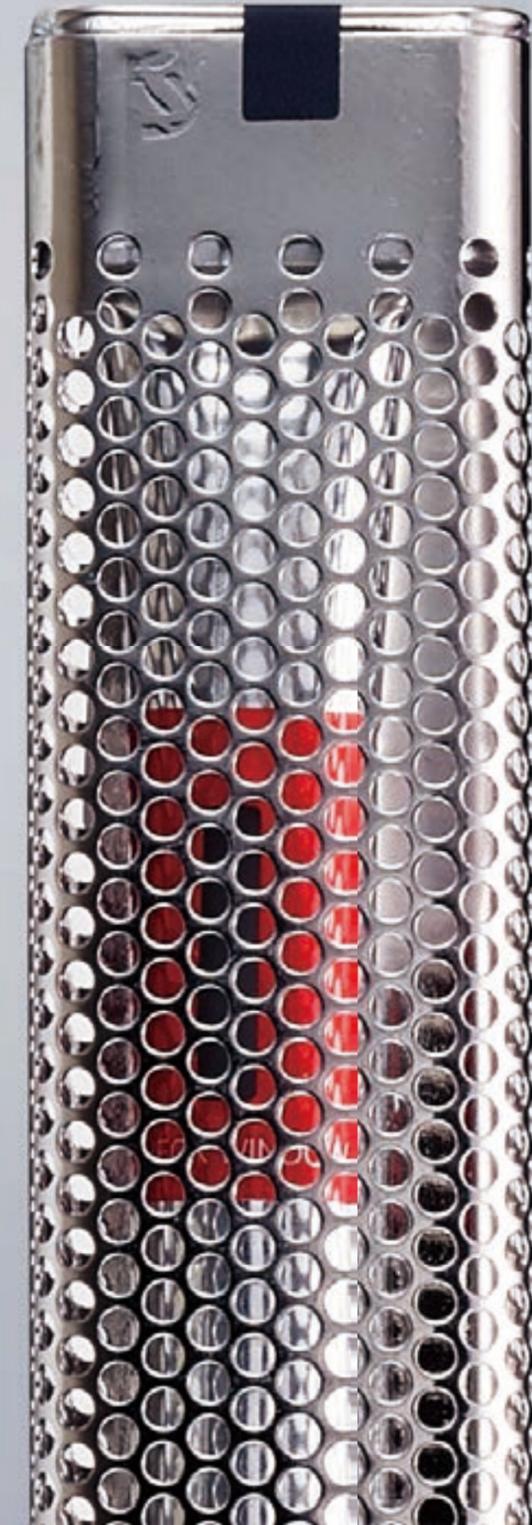




Easy

Simply attach it in any fire protection blind spot.

It can be easily and conveniently installed by anyone, and can be custom-made in different sizes and volumes of protection. It can be applied anywhere including small areas like switchboards that are difficult to detect during a fire, places that you cannot easily reach, and other locations with high risk of fire due to complex electrical wiring.



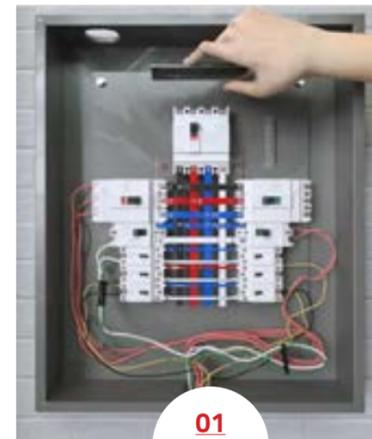
SMART CAPSULE

·Patent : 10-1857775

·Design : 30-0907732

The capsule inside of 'STICK' will discharge the chemical when the temperature reaches 100-110°C(210-230°F) by temperature sensing feature which does not require any power supply.

The 'STICK' fire extinguisher is a smart automatic product with fire extinguishing capsule that automatically detects the temperature in a space where the interior temperature rises to 100-110°C(210-230°F), then instantly discharges over 90% of its fire extinguishing agent , spreading it throughout the area of protection and capturing the heat in the air to extinguish the fire.



INTERNAL SENSING
TECHNOLOGY OF THE CAPSULE

ECO-FRIENDLY FIRE
EXTINGUISHING CHEMICAL

INNOVATIVE DESIGN





NOVEC 1230 AGENT

The best eco-friendly fire extinguishing agent in the world, enabling continuous use without impact of the global greenhouse gas reduction policy.

Most excellent
in no-observed-
adverse-effect
level (NOAEL)

"0" ozone
depletion
potential
(ODP)

Substitute for
halon HFC that
can be used
continuously

"1" global
warming
potential
(GWP)

"3 to 5" days
of atmospheric
life time(ALT)



**Famous
Fire
Protection**



FIREKIM

'STICK' System using 3M™ Novec™ 1230 Fire Protection Fluid

INTERNAL SENSING
TECHNOLOGY OF THE CAPSULE

**ECO-FRIENDLY FIRE
EXTINGUISHING CHEMICAL**

INNOVATIVE DESIGN



INNOVATIVE DESIGN

The innovative design that won the [Design Award] at the iF Design Award 2019, with an exterior made of stainless steel in consideration for functionality and durability.

There is no design without purpose in an automatic fire extinguishing system that will evolve the paradigm of fire prevention by innovativeness, which helped it to win the [Design Award] at the iF Design Award 2019. It features numerous discharge holes for the fire extinguishing agent to be sprayed and propagated quickly to put out a fire, and is designed with a light, compact size that makes it fit perfectly in the palm of your hand for simple installation and convenient management.

INTERNAL SENSING
TECHNOLOGY OF THE CAPSULE

ECO-FRIENDLY FIRE
EXTINGUISHING CHEMICAL

INNOVATIVE DESIGN



EXTINGUISHING SYSTEM PRODUCT

[STICK](#) [Go >>](#)

[SENSOR+](#) [Go >>](#)

[RED BLOCK](#) [Go >>](#)

PRODUCT

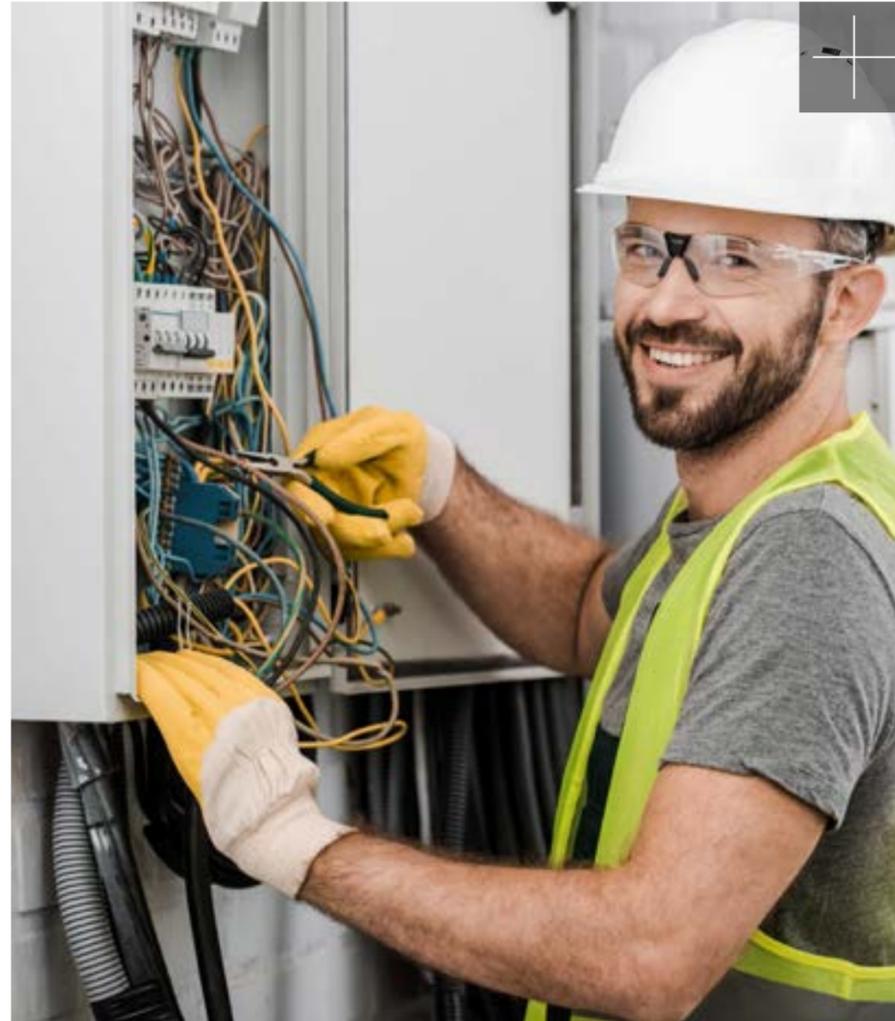




STICK

Small-scale switchboards / switchboards

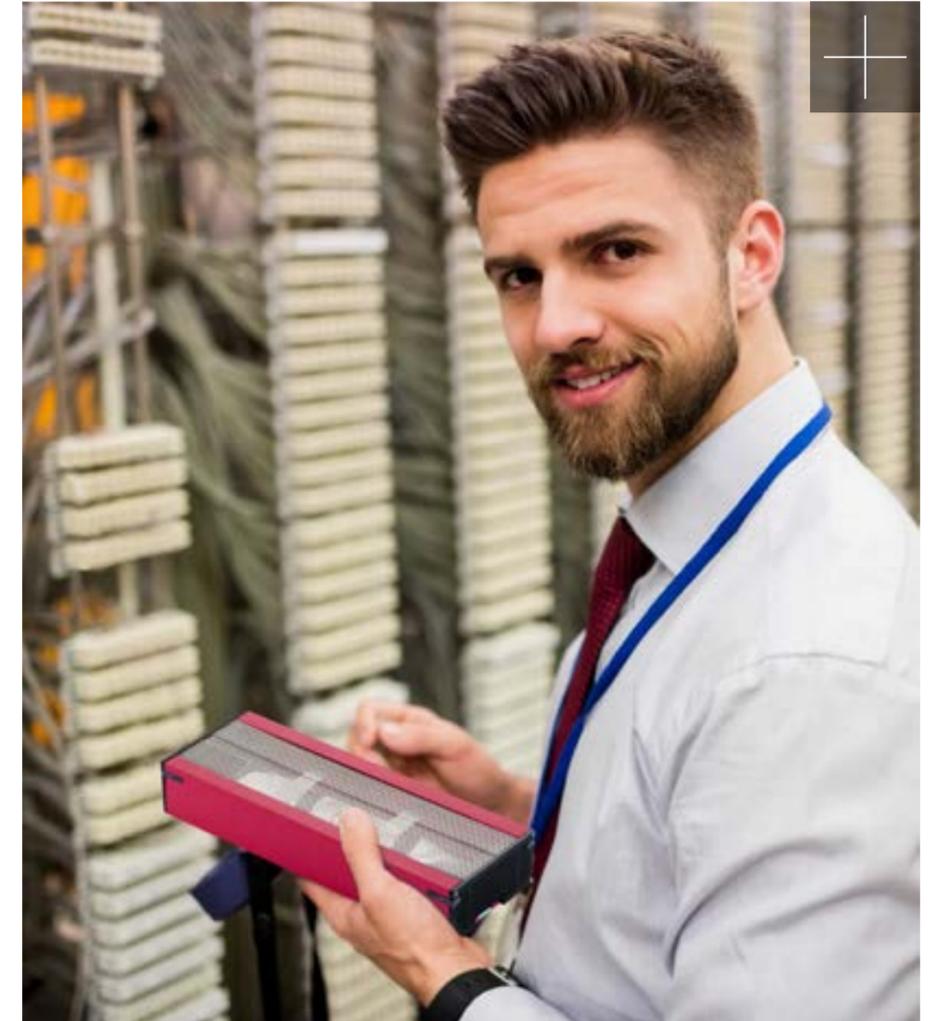
For application in crowded facilities, nursing hospitals, traditional markets, drones, electronic products, and batteries for electric cars, etc.



SENSOR+

Industrial production facilities

For application with high-pressure and high-temperature equipment in semiconductor manufacturing processes, chambers, chillers, other industrial machines, telecommunication devices, and various electrical panels.



RED BLOCK

Mid to large-sized switchboards / panel boards

Large drones, ESS, xEV, ships, automotive charging terminals, electric batteries, power plants, UPS, switches, transformers, etc.

What's STICK



· Patent : 10-1857775
· Design : 30-0907732



- Overview
- Features

New standard of fire extinguishing system in the world!

The 'STICK' is a smart automatic fire extinguisher which is it automatically detects the temperature in a space where the interior temperature rises to 100-110°C(210-230°F), then instantly discharges over 90% of fire extinguishing agent. During the spread out the agent to the protection area, it also extinguish by cooling, smothering, and pushing out the air in the area to take away the heat simultaneously.



Model	Product dimensions (W X H X L)	Volume of protection according to NFPA standard	Maximum installation height	Product weight	Warranty	Types of fire for application
FSC130	25 x 15 x 130	0.018m³	0.7m	43.5g	7 Years	A B C
FSC200	25 x 15 x 200	0.031 m³	1.2m	68.7g		
FSC250	25 x 15 x 250	0.041 m³	1.2m	84.5g		
FSC300	25 x 15 x 300	0.050m³	1.2m	100.0g		



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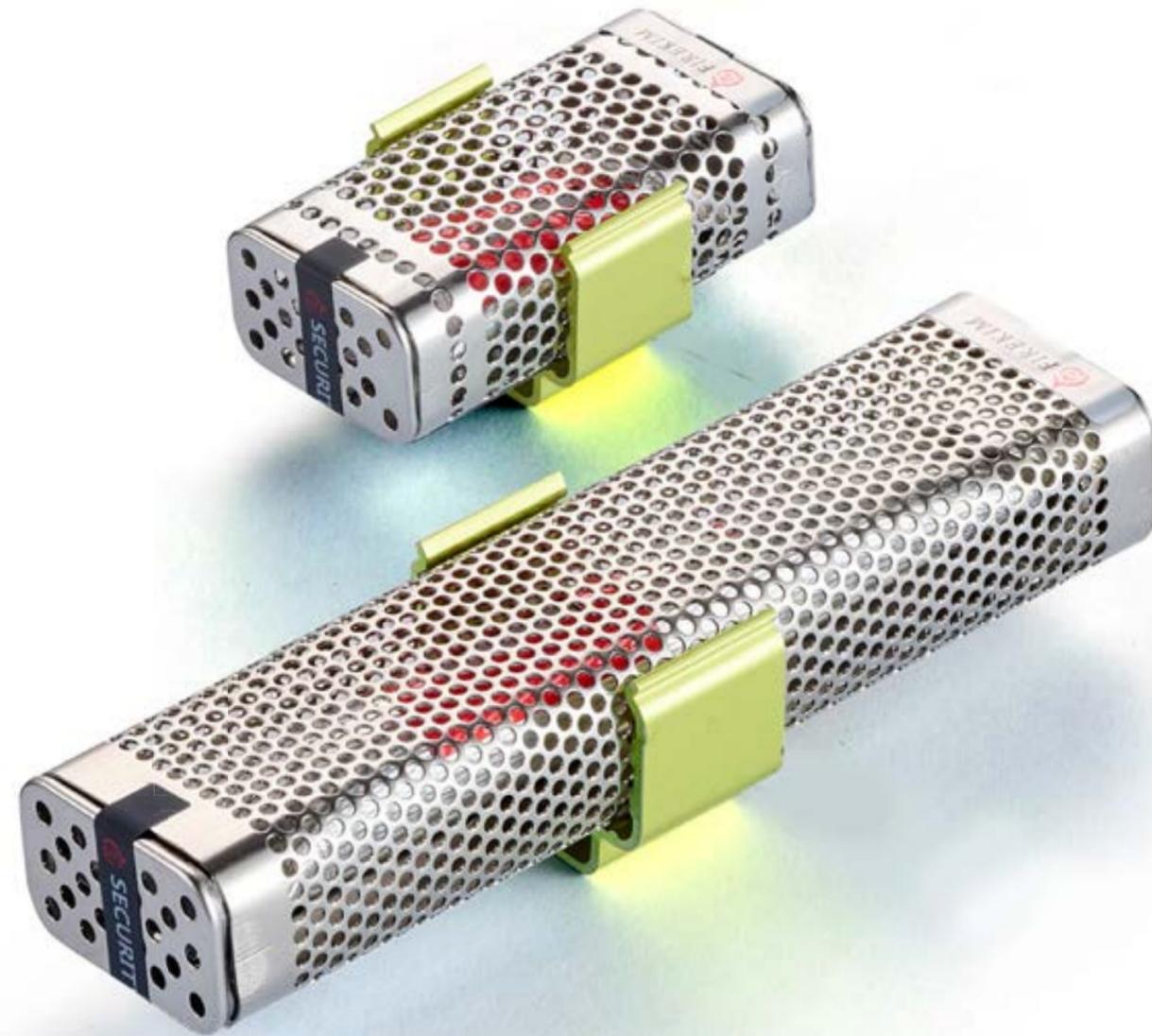


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Special features of STICK

The automatic 'STICK' fire extinguisher uses Novec 1230, the best eco-friendly fire extinguishing agent in the world, which can be used continuously without impact of the global greenhouse gas reduction policy.



- Overview
- Features**



Activation temperature

100°C ~ 110°C
212°F ~ 230°F



Capsule reaction speed

90% discharge in 1 second



KFI certification completed

Certified by Korea Fire Institute (KFI)
The first small space fire extinguishing system in gas industry (SOGU 17-1)



Uses Novec 1230

Extinguishes by smothering, with outstanding electrical insulation by shutting off cooling oxygen as it vaporizes and absorbs heat



Easy to use

Easy to use regardless of gender or age



Lightweight

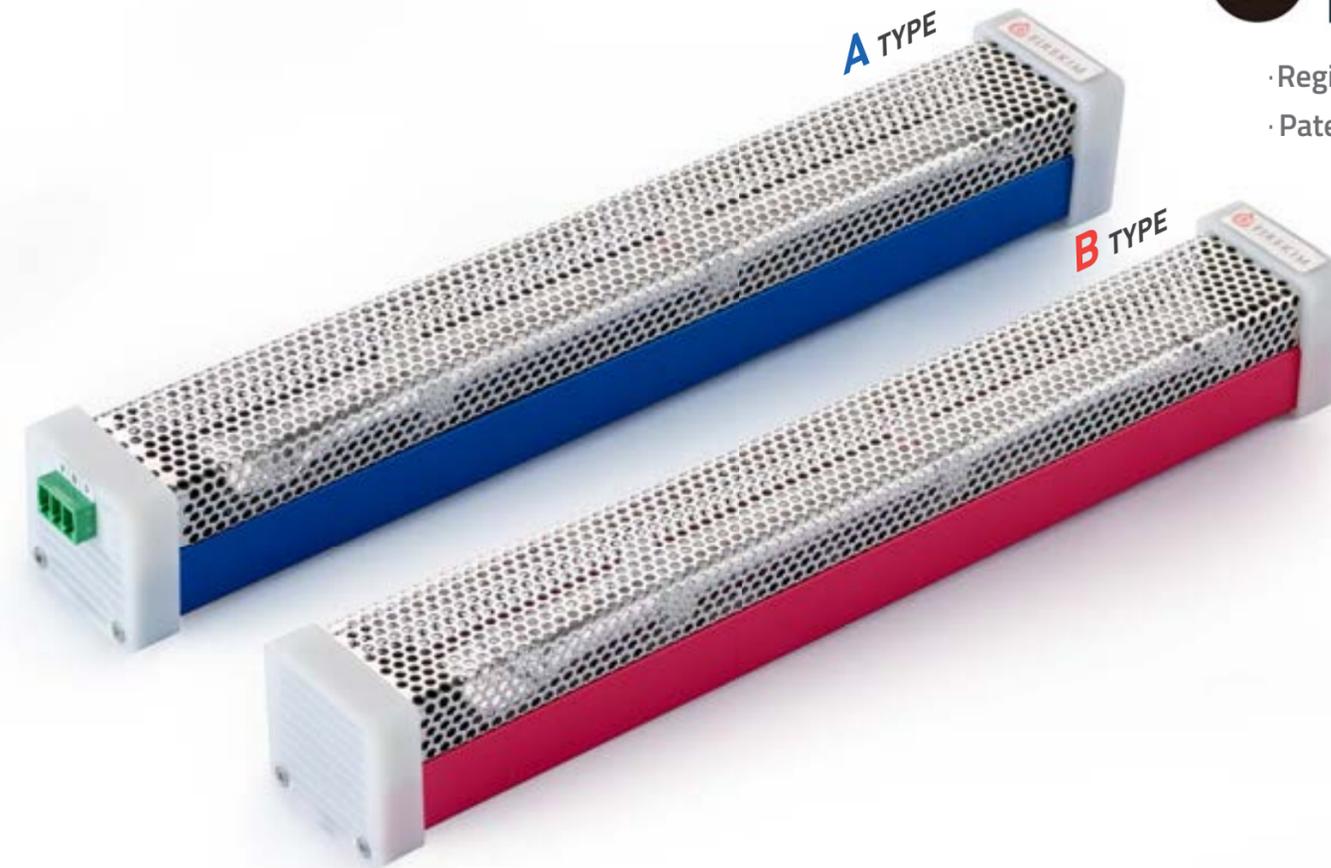
'STICK' 130 is only 43.5g



What's STICK SENSOR+



· Registering trademark
· Patent Pending



- Overview
- Features

New standard of fire extinguishing system in the world!

The 'STICK SENSOR+' gives buzzers through monitoring system and fire extinguishing capsule to activate when there are abnormal signals such as changes in smoke concentration, temperatures higher than a certain level, leakage of extinguishing agent in installed environment.

Model	Product Dimensions (W X H X L)	Amount of fire extinguishing chemical	Volume of protection according to NFPA standard	Max.installation height / weight	Product voltage / Power consumption	Persisting period / Product warranty	Control output
FSS185 A	28 x 27 x 232	23.2g	0.027 m ³	0.8m / 128.6g	DC 24V / 0.3W	7Years / 7Years	<ul style="list-style-type: none"> • Identical feature Fire extinguishing capsule status display Set smoke concentration / Temperature display
FSS185 B	28 x 27 x 229						<ul style="list-style-type: none"> • Additional feature for A Type Display of temperature variation



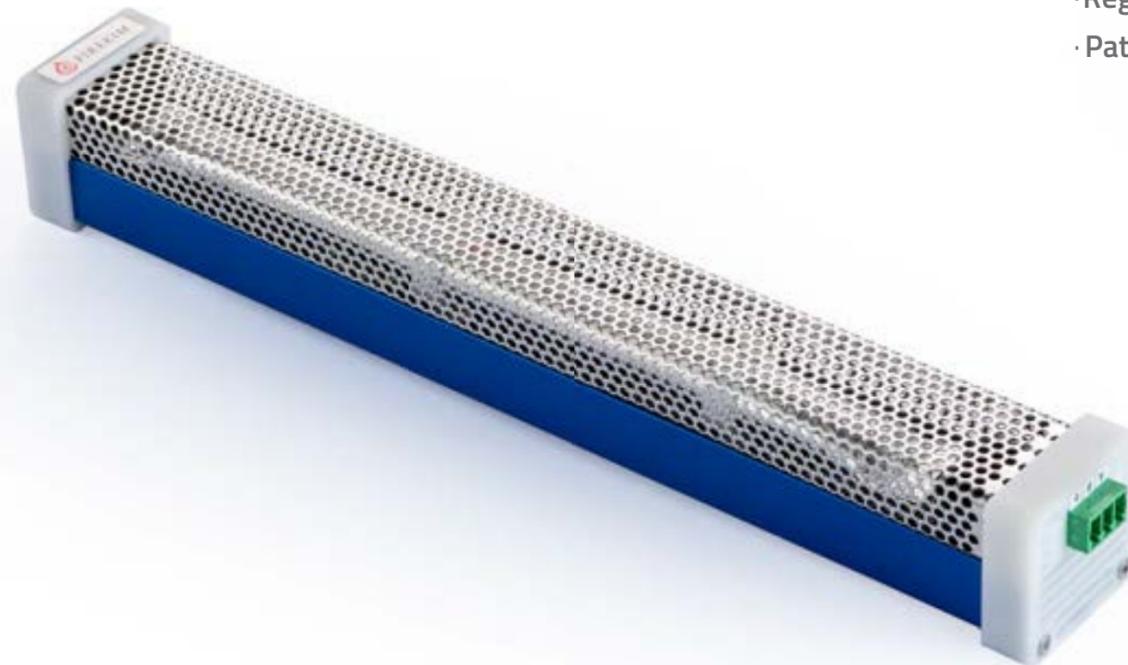
Automatically activates by detecting the set temperature and occurrence of smoke
Alarm sent to central control in case a specific temperature is reached or the system is activated



What's STICK SENSOR+



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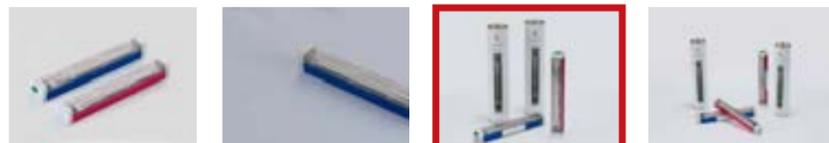
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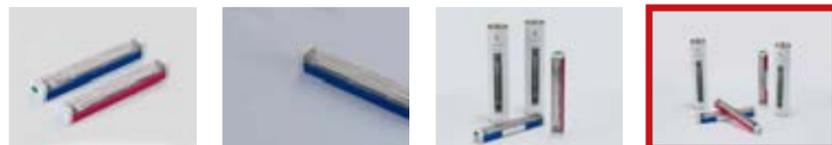


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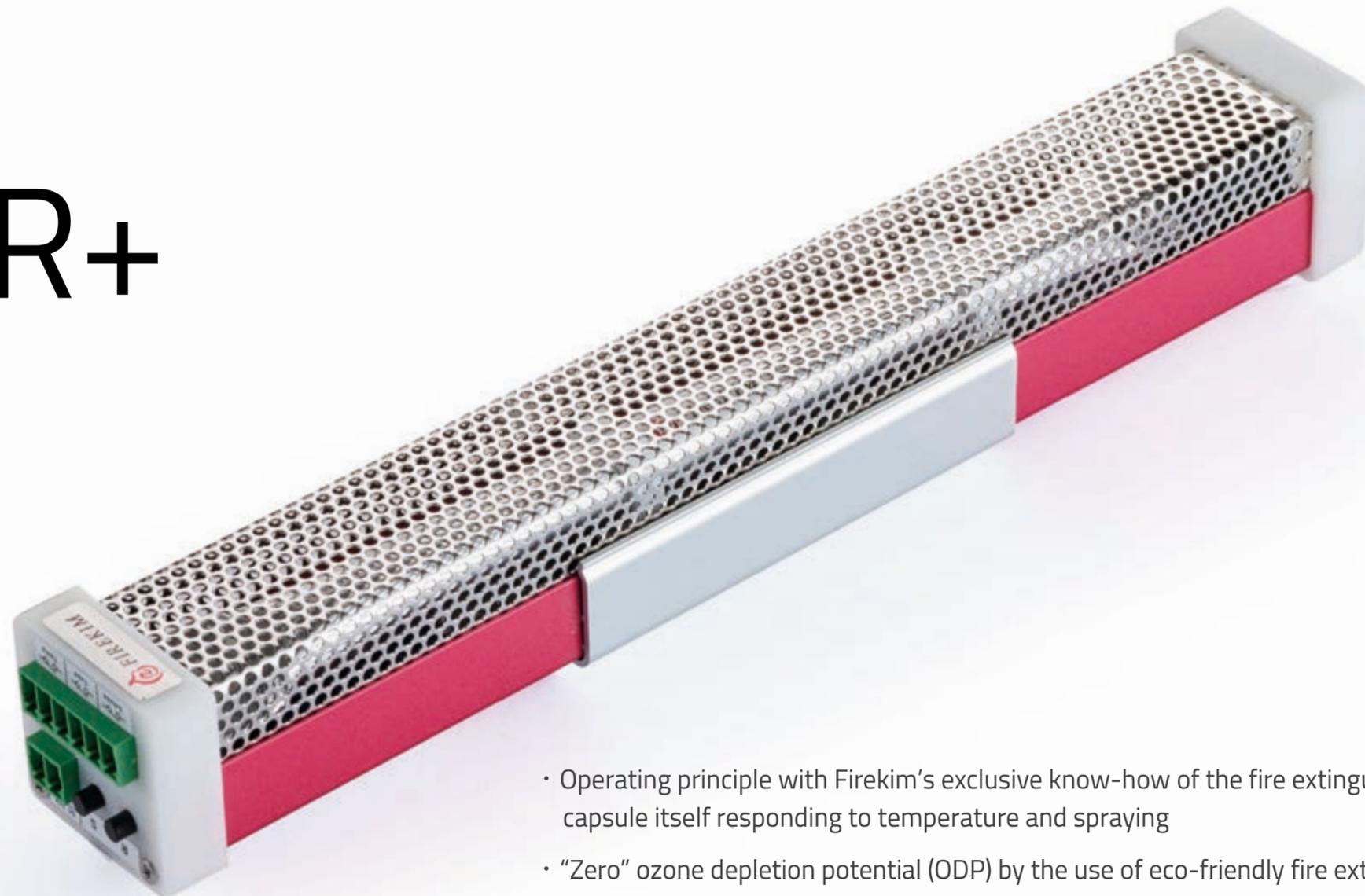
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Automatically activates by detecting the set temperature and occurrence of smoke
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Special features of STICK SENSOR+

Overview **Features**

- Operating principle with Firekim's exclusive know-how of the fire extinguishing capsule itself responding to temperature and spraying
- "Zero" ozone depletion potential (ODP) by the use of eco-friendly fire extinguishing agent
- Temperature Sensor activated when set temperature is reached (customer selects from among 50, 60, 70 or 80°C (122, 140, 158 or 176°F))
- Smoke Sensor activated when set smoke concentration is reached (customer selects from 1st to 4th stage)
- Simply reset by a switch
- Verify whether the fire extinguishing capsule works



Special features of RED BLOCK

- Product is applicable to mid to large-sized spaces
- Activates within 3 seconds to extinguish fire in the volume of installation
- Discharges over 90% of the fire extinguishing agent within 30 seconds
- The system of automatic fire extinguishing agent discharges by responding to heat
- Possible to design customers' requirements of own activation time



· Registering trademark
· Patent Pending



- Overview**
- Features



What's RED BLOCK

The 'RED BLOCK' is applicable to mid to large-sized spaces such as electrical panels, switches, transformers, ESS rooms, ships, large drones, UPS, and power plants.

- The N-Type is a product designed based on the existing 'STICK' product to suit any mid to large-sized protection volumes.
- The S-type product is designed to give buzzers through monitoring system and fire extinguishing capsule to activate when there are abnormal signals such as changes in smoke concentration, temperatures higher than a certain level in N-type



- Overview**
- Features

RED BLOCK

Model	Product Dimensions (W x H x L)	Volume of protection according to NFPA standard	Max.installation height	Product voltage / power consumption	Persisting period / Product warranty	Types of fire for application	
Fire extinguishing tools for small spaces	FRB250N	103 x 43 x 256	0.15m³	1.0m	-	7 Years / 7 Years	A B C
	FRB250S	103 x 43 x 259	0.15m³	1.0m	DC 24V / 0.3W		
FRB300N	103 x 43 x 306	0.23m³	1.0m	-			
FRB300S	103 x 43 x 309	0.23m³	1.0m	DC 24V / 0.3W			

*S Type : Alerts central control when the set temperature or smoke concentration are reached



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S Type

Normal Type

 Overview
Features

RED BLOCK

Model	Product Dimensions (W x H x L)	Volume of protection according to NFPA standard	Max.installation height	Product voltage / power consumption	Persisting period / Product warranty	Types of fire for application
Automated gas fire extinguishing devices	FRB350N	103 x 43 x 356	1.0m	-	7 Years / 7 Years	A
	FRB350S	103 x 43 x 359	1.0m	DC 24V / 0.3W		B C

*S Type : Alerts central control when the set temperature or smoke concentration are reached



PRODUCT APPLICATION

[House & Market](#) [Go >>](#)

[Industrial facility](#) [Go >>](#)

[Population density facility](#) [Go >>](#)

APPLICATION



Application

Traditional Market

Firekim's products are installed in commercial facilities including grocery stores and traditional markets, and we strive to protect the safety of lives and valuable assets.

▶ Examples of installation in traditional markets in 2016 (Cheongju Sachang Market, Jecheon Central Market)



▶ Lotte Food, Pasteur, LG Hausys (switchboards, chambers), Samsung Semiconductors (chillers)



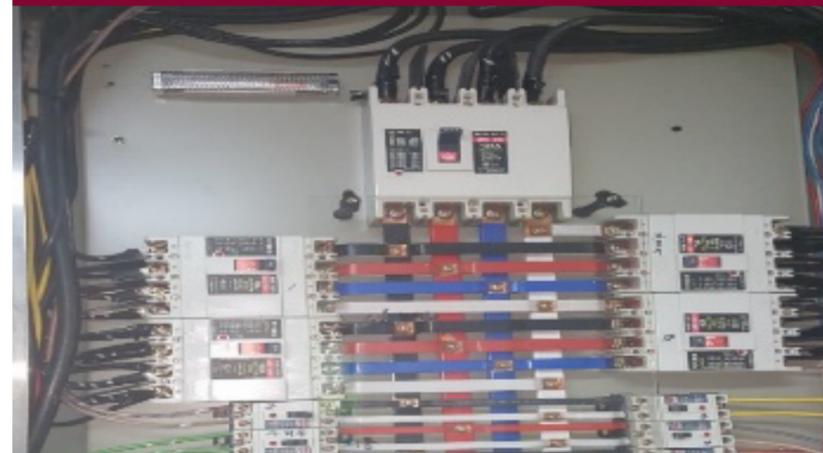
Application

Public hospitals and Nursing facilities

Firekim's products are able to installed in national and public hospitals and nursing facilities, and establish a safe environment to protect customers' precious lives.

▶ Municipal Surak Nursing Home

MUNICIPAL SURAK NURSING HOME 1F



MUNICIPAL SURAK NURSING HOME LAUNDRY ROOM



▶ Jungnang Senior Hospital

JUNGNANG SENIOR HOSPITAL 1F OFFICE



JUNGNANG SENIOR HOSPITAL 1F KITCHEN

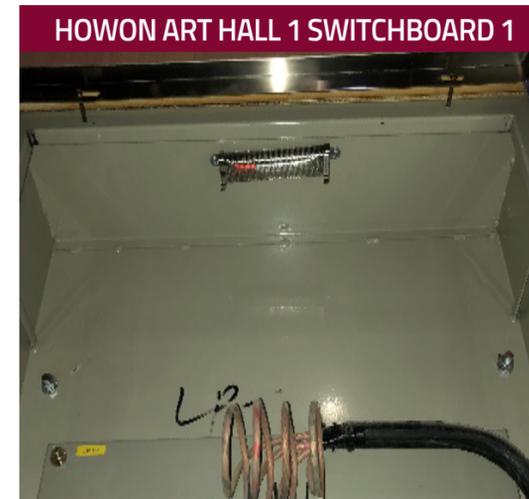
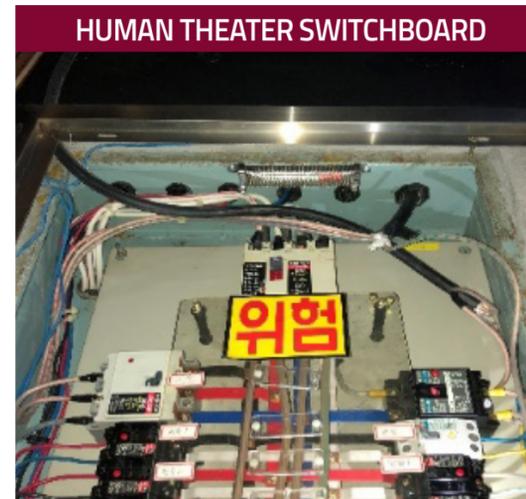


Application

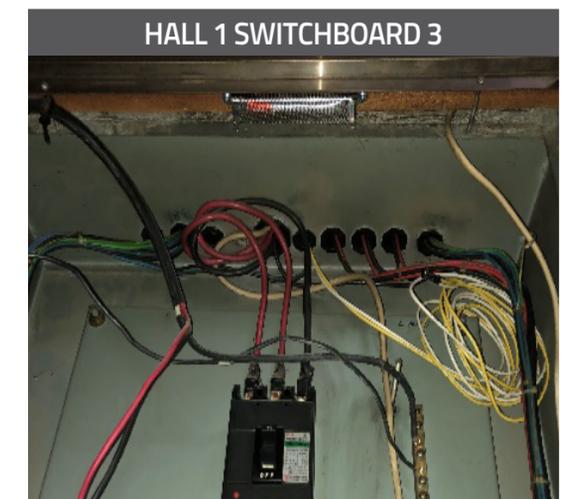
Performing halls and Universities

Firekim's products protect the precious lives of customers' in crowded facilities including performing halls and universities where safety is critical.

▶ Human Theater, Howon Art Hall



▶ Hansung Art



WE MAKE PRODUCTS THAT SAVE **LIVES.**

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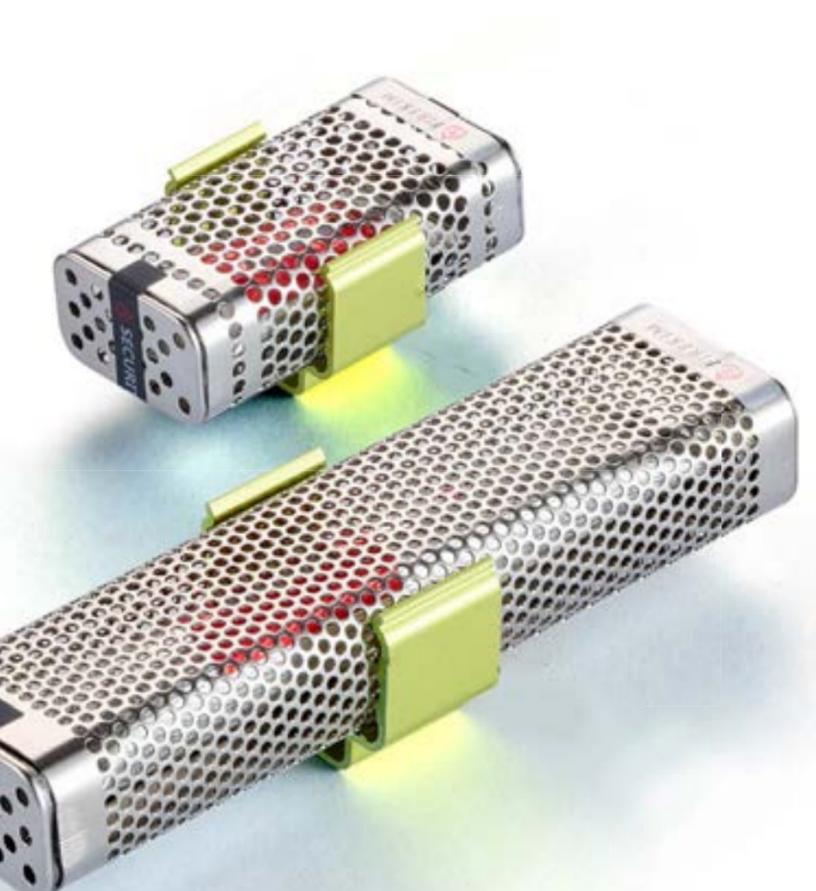
[Global Network](#) [Go >>](#)

COMPANY



Overview

Firekim's creative and progressive technology makes 'Products that save lives.'



Company Profile

Company	FIREKIM Co., Ltd.
CEO	Kim Byung-yul
Founded on	December 9, 2014
Headquarters address	48, Jungsimsangeop 2-ro Ochang-eup, Cheongwon-gu, Cheongju, Chungcheongbuk-do 28119 (Information Technology T-Factory Office #208, Chungbuk Regional SMEs and Startups Office)
Plant address	33, Sinpyeongjungsin-gil Ochang-eup, Cheongwon-gu, Cheongju, Chungcheongbuk-do 28132
Chicago Office	Korea Business Development Center, Chicago 475 North Martingale Rd., Suite 700, Schaumburg, IL 60173 Woodfield Corporate Center, www.425-475.com
Contact	Tel: 043-215-5435 Fax: 043-216-5435 Email: info@firekim.co.kr
Homepage	www.firekim.co.kr

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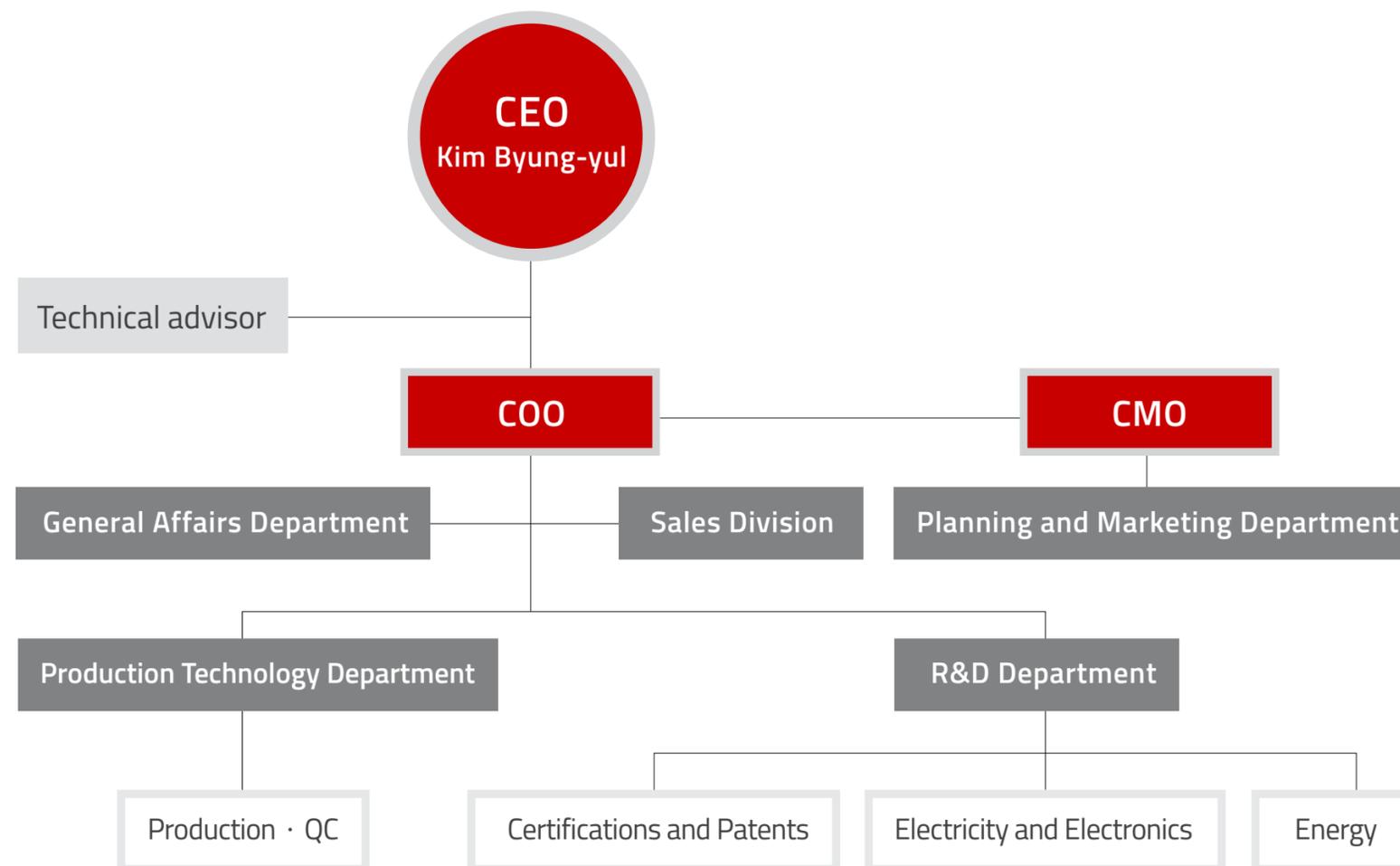


Organization

“We will create unique value to Firekim by solving the problems of fires.”

Firekim Co., Ltd. is an R&D company that develops multi-function, high-performance firefighting safety, response systems through convergence of IoT technology and also owns the technology source to enable integration of relevant products.

With innovative and independent technology, Firekim Co., Ltd is growing and developing into a new-form and next generation of firefighting safety platform company specialized in the age of the 4th industrial revolution. We will continue to strive to solve “your concerns of fire.”



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History

Since its founding in 2014, Firekim Co., Ltd. has been proposing new possibilities in the firefighting safety industry and achieving innovative growth.

- 2014** 12 Founded FIREKIM

- 2015** 03 Entered 5th class of Korea SMEs and Startups Agency

- 2016** 03 Acquired venture company certification and signed CDA contract with 3M Korea
- 07 Completed development of 'STICK' fire extinguisher
- 12 Corporate conversion into Firekim Co., Ltd

- 2017** 01 Seed-stage investment attracted from Korea Venture Consulting Inc.
- 07 'STICK' recognized as the nation's first-ever gas-type fire extinguishing device for small spaces by KFI
- 09 Attracted investment from Korea SMEs and Startup Agency
- 12 Received "Minister of the Interior and Safety Award" in Outstanding Product category at 16th K-Safety Awards

- 2018** 06 'STICK' certified as gas-type fire extinguishing device for small spaces by KFI
- 10 Signed private contracts with Seoul Metropolitan Government and KTL
- 11 Registered as a product supplier for POSCO / signed NDA with Samsung SDI

- 2019** 01 Certified for EPC performance (designated as item for test purchase)
Received Innovative Design Award at iF Design Award
- 02 Sold products to LG Chem / registered on ServeOne
Exported products to India, Saudi Arabia, and South Africa
- 03 Supplied products registered on ELAND service MRO
- 04 Acquired CE mark of 'SENSOR+'
Registered and supplied parts for Samsung semiconductors
- 06 Participated in 2019 NFPA Conference and Expo
- 07 Signed sales contract with iMarketKorea (MRO registration)
Supplied to Korea Gas Corporation (Incheon Terminal)
- 09 Signed agreement for export incubators with KOTRA /
Opened Chicago Office Installed product in Sangdang-gu Office, Cheongju
- 10 Installed product in Heungdeok-gu Office, Cheongju (10.11)
2019 DUPEX / 2019 InterBattery
Selected as cooperating startup for water business platform by Korea Water Resources Corporation (K-Water)
'SENSOR+' Selected as Good Design
- 12 Signed NDA with Kokam Co., Ltd. (R&D)

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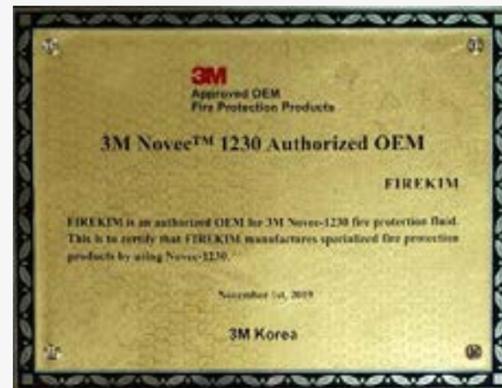


Certificate

The efforts of Firekim in striving to develop firefighting safety products are protected by quality certifications, performance approvals, and patent registration.

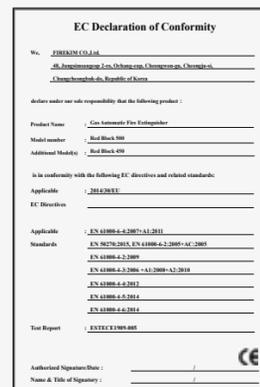
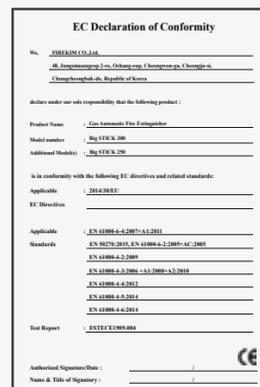
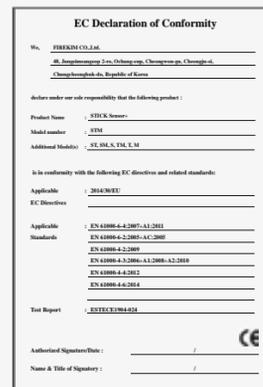


CERTIFICATION RESULTS



- Overview
- History
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- Global Network

KC, CE CERTIFICATION



Certificate

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PATENT RESULTS (DOMESTIC/OVERSEAS)



- Overview
- History
- Certificate**
- Global Network

AWARDS RECEIVED



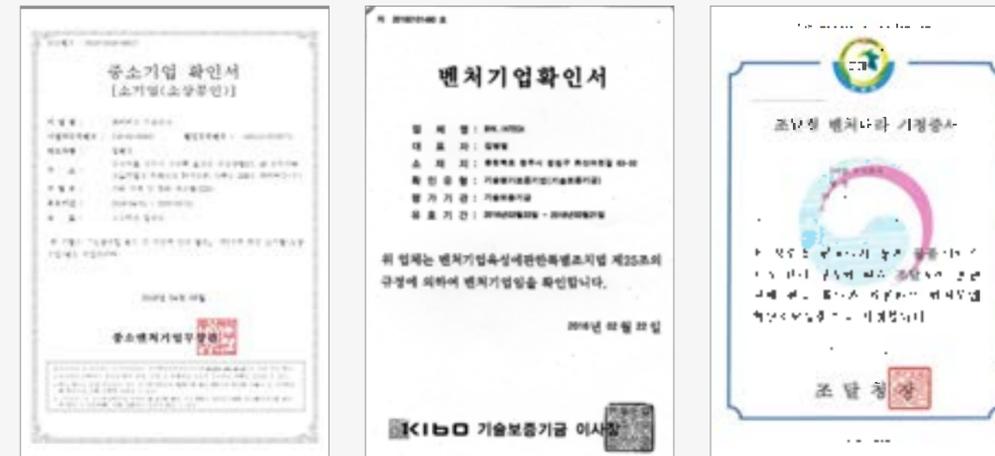
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KFI CERTIFICATE



CERTIFICATES RELATED TO BIDDING WITH PUBLIC AGENCIES



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FIREKIM

Global Network



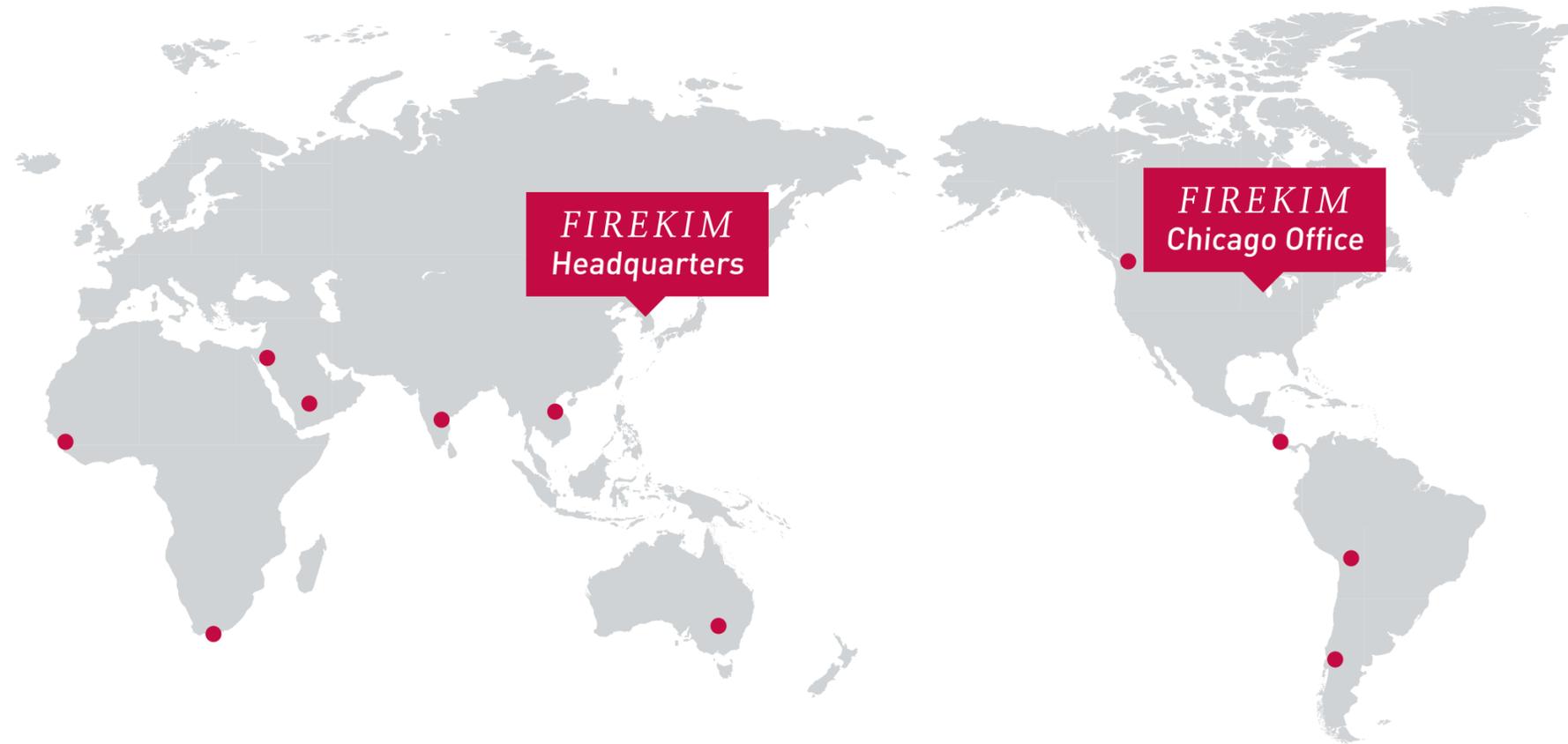
- Overview
- History
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- Global Network**

FIREKIM CLIENT

* 2019. 12



Global Network



- Overview
- History
- Certificate
- Global Network**

Exported to 7 countries including U.S.





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