

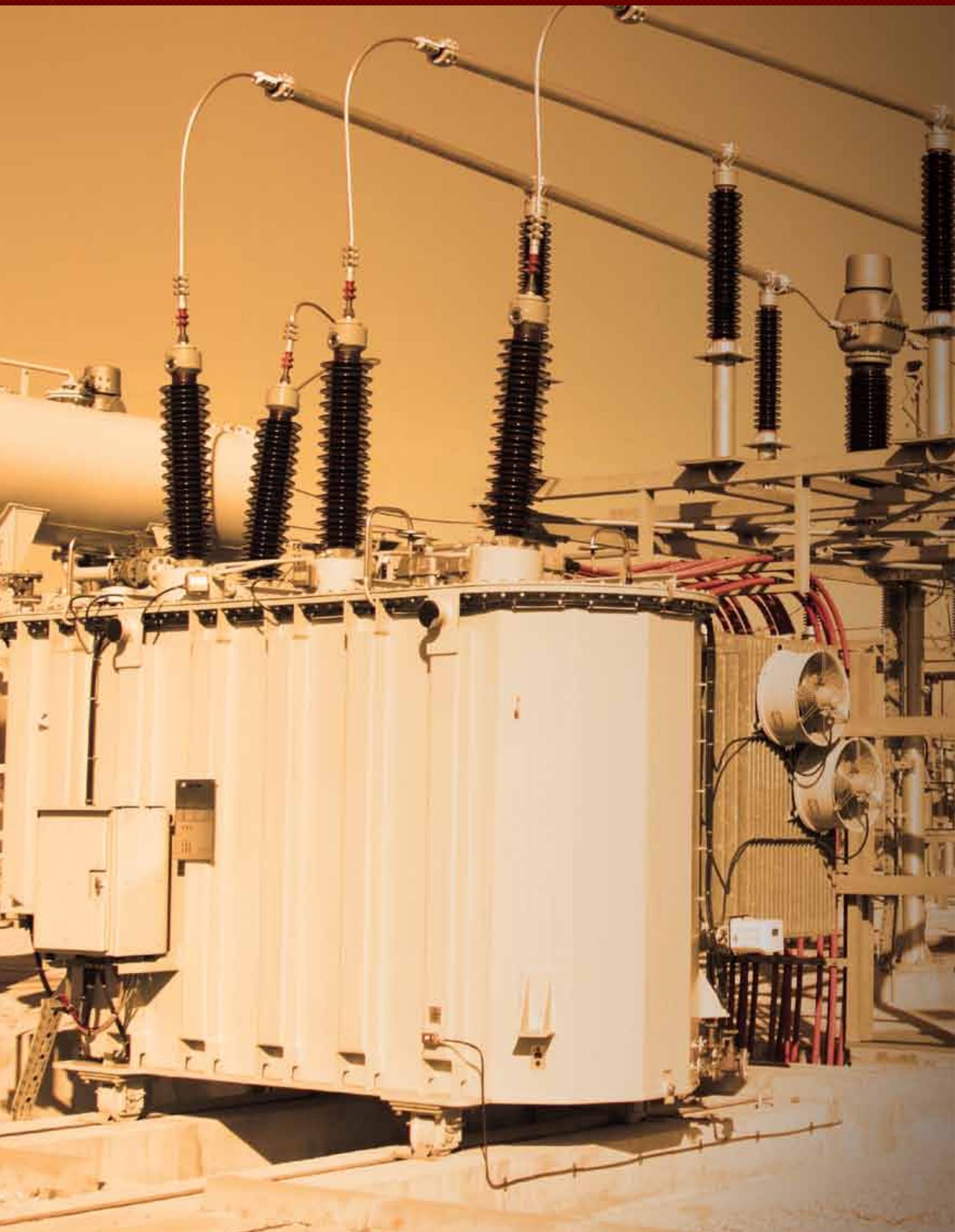
A single system for transformers.

A single solution.



Transformer Auto-Quell System







Electrical transformers are a necessity and a boon when it comes to business operations, yet they bring with them grave danger as well. The oil needed to fuel these transformers, coupled with high temperatures generated and the presence of huge amounts of electricity, makes the area vulnerable to fire. No matter what the size, oil-filled transformers pose a risk of explosion should the transformer fail and the insulating oil ignite. Even a small spark caused due to faulty wiring can lead to a deadly conflagration. The problem: since most transformers are kept outdoors, the fire is only detected when it's already too late. Leading to not only the transformer being destroyed but financial losses as well. Another major concern is the high temperature and spread of oil that can cause serious damage to the adjacent environment. Even if you were able to reach the transformer in time, you wouldn't necessarily be able to extinguish the fire.

Introducing the revolutionary Transformer Auto-Quell System from Ceasefire – an integrated, local application based system that uses Watermist suppression technology, confining the fire in or around the transformer area, and extinguishing it before it spreads. The Ceasefire Auto-Quell System is fully equipped to detect and suppress fires automatically, without leaving any collateral damage. Which means that the system not only tackles fires efficiently, but also helps reduce the time and money taken to clean up and re-establish damaged property. While its non-damaging, non-corrosive technology ensures zero downtime.



## The Transformer Auto-Quell System:

Transformers are electrical devices which convert alternating currents from one voltage to another, making them vital for any operation to run smoothly. The Ceasefire Watermist Auto-Quell System is a revolutionary, all-purpose detection and fire suppressant solution for transformer fires.

The system consists of a network of detection devices, special Watermist nozzles and a connection to a water tank installed in the local environment of the transformer. In the event of a fire, the system is programmed to kick into action in seconds. The specially designed

nozzles dispense Watermist, made up of microscopic droplets of water (below 120 microns), onto the fire affected area, quickly putting out the flames as well as bringing the temperature down to non-combustion levels.

Entirely self-activated and requiring no human intervention, this integrated system provides a complete detection and suppression solution for transformer fires, working quickly to save property and lives. What's more, since the Auto-Quell System is Watermist based, it has no long-term effect on the work environment and operations can resume without any time lost.



## Components of the Transformer Auto-Quell System:

### Control Panel:

At the very heart of the system is a control panel. On being alerted by the detectors, this state-of-the-art control panel instantly sends a signal to activate the system and release the extinguishing agent.



### Detection Components:

Ensuring high sensitivity to fire, the system features different types of detectors such as smoke detectors, linear heat detectors, flame detectors and air sampling devices.

#### Smoke Detectors

Built to detect even the minutest particle of smoke, they instantly raise the alarm in the event of a fire by alerting the control panel.



#### Heat Detectors

In a fire situation, the increase in temperature triggers heat detectors in seconds. Heat detectors are of two kinds, rate-of-rise and fixed temperature detectors.



#### Linear Heat Detector

A line-type form of fixed temperature heat detection.



These detection devices communicate with the control panel, sending a signal that activates the system the very second a fire is detected.

## Fire Suppression Components:

To create a complete fire suppressant solution, the system is made up of different components that come together efficiently and effortlessly.

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### Watermist Extinguishing Agent

Though water is one of the most potent fire extinguishers around, large quantities are required to extinguish a fire. Harnessing water's immense cooling powers and multiplying them thousandfold, Ceasefire's Watermist technology breaks water down into a fine mist below 70 micron. This mist is then thrown at the transformer fire with a great kinetic force, covering a large surface area. As soon as the mist comes in contact with the fire, it instantly turns into steam. Enveloping the flames, cutting down the oxygen supply and reducing the temperature to below combustion levels. Ensuring that even the largest transformer fire succumbs to Watermist technology. In minutes.



### Pipes and Fittings

High quality pipes ensure that the water is pushed to the nozzles at a constant pressure.



### Nozzle Head

Using atomisation technology, the Watermist is developed in specially designed nozzles. Available in a range of over 12 nozzles, with varying orifices in different angles, this system has a nozzle that meets your every requirement.



### Audible Alarm:

A loud, audible alarm goes off as soon as the fire is detected, alerting personnel in the area to the danger.

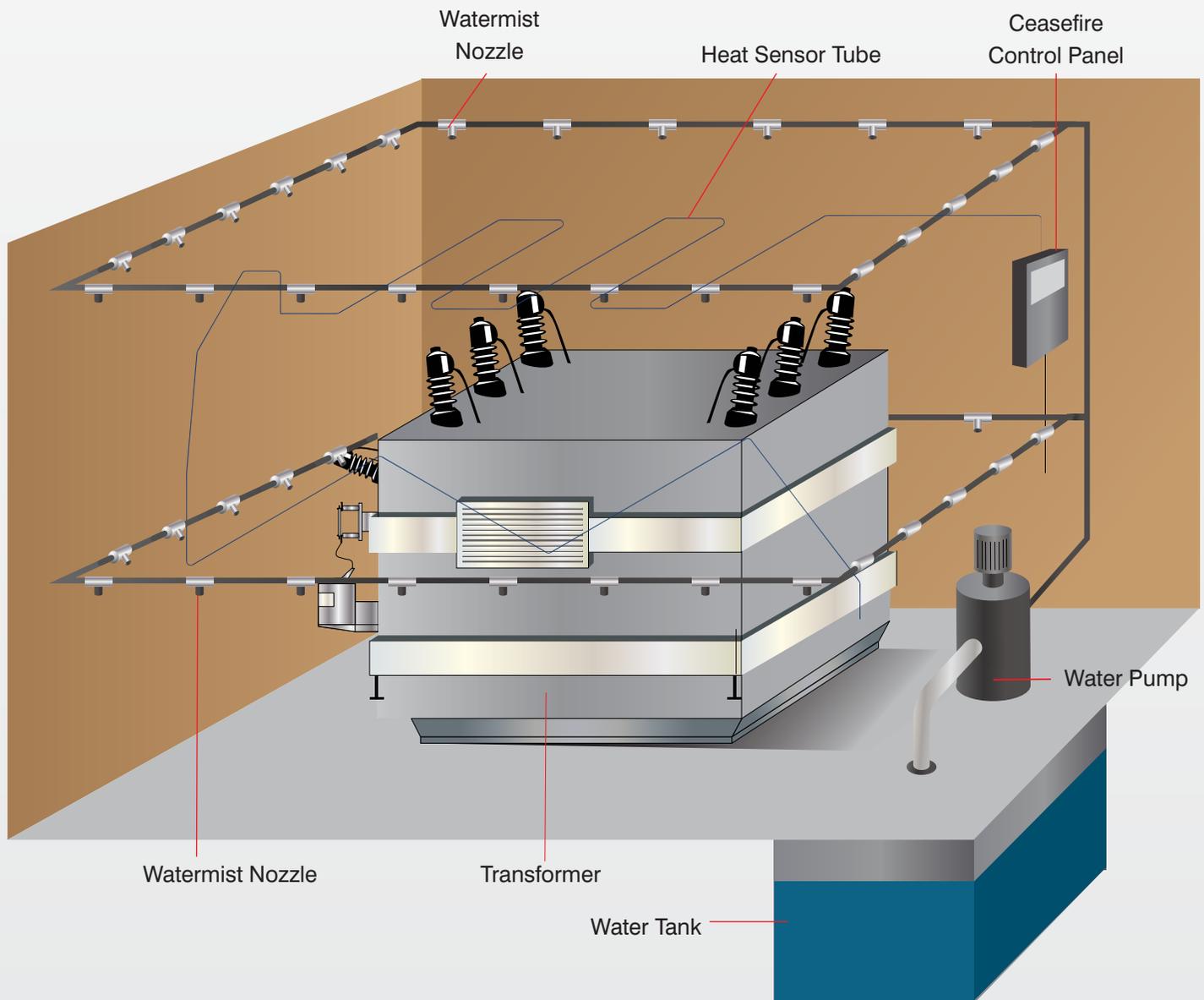


A Pump Driven System is used to deliver the Watermist and put out transformer fires.

## Pump Driven System:

The Pump Driven System adds cutting edge technology to traditional sprinkler systems by harnessing Watermist for maximum extinguishing efficiency. Not only is it an economical replacement for traditional sprinkler systems in offices and buildings, but is also suitable for larger scale local applications, or areas where the fire hazard is likely to be in an enclosed space (such as a transformer room). Water, the principal

component of this extinguishing agent is stored in a reservoir/tank that is connected to a pump. On receiving a signal from the control panel a high-powered pump propels water from the water reservoir/tank quickly and efficiently to the pipes and nozzles. This system generates high volumes of Watermist, ensuring higher firefighting effectiveness without using much water.



## Features of the Watermist Auto-Quell System:



### Multiple Applications

Works on A, B, C and Electrical Fires, and is suitable for a variety of applications.



### Self-Contained

The system is entirely self-contained. It does not require any power supply and will function normally in the event of a power outage.



### Self-Actuating

Featuring an inbuilt detection mechanism that leads to instant and automatic activation, the system eliminates the need for human intervention.



### 24x7 Protection

Being automated, the system is in a perpetual state of readiness to combat a fire as soon as it breaks out.



### Extended Reach

Includes flexible tubing that can reach difficult-to-access areas that may not be able to accommodate any other means of detection.



### Quick Installation

Simple design, and can be installed within a few hours, which means a significant reduction in labour costs and downtime.



### Long Lasting

Its rugged quality ensures it can withstand even harsh conditions where other types of detection systems might be rendered inadequate.



### Environmentally Friendly, no ODP

Unlike other firefighting agents like Fluorocarbons, CO<sub>2</sub>, Dry Chemical Powders, etc., Watermist does not have any effect on the ozone layer nor does it contribute to global warming.



### Non Conductive

The droplet size is <100 microns. Such a small-sized droplet has little kinetic energy. Being light, it floats in the air and is non conductive up to 35kva.



### High Standards

Built to Ceasefire's high standards, which are in compliance with international quality standards.



### Low Water Usage with Mist of 60-100 microns

With normal firefighting systems, only about 5% of water directed at the fire is actually used to put out the fire. Watermist not only uses less water to put out fires, it also uses only 20% of the water a conventional water-based system uses.



### Extra Security for People – Screening

The small droplets of mist fall over a larger surface, creating a perfect barrier for thermal radiation, thus providing effective protection against fire for firefighters and people in the vicinity.



### Post Fire Damage Reduction

About 80% of the damages resulting from a fire are not caused directly by the flames, but by the extinguishing action. Since the mist, with an appropriate (high) degree of dispersion, fully evaporates in the fire environment, it leaves behind no collateral damage.



### Safe for People and the Environment

As the mist comprises of water, it does not expose people to chemically active substances, ensuring it can be safely used with no risk of medical problems.



### Economical

Water as an agent does not cost anything. Traditionally the amount of water required is significantly low. Which in turn means smaller water reservoirs and pumps with lesser construction and procurement costs.



### An Alternative to the Traditional Sprinkler System

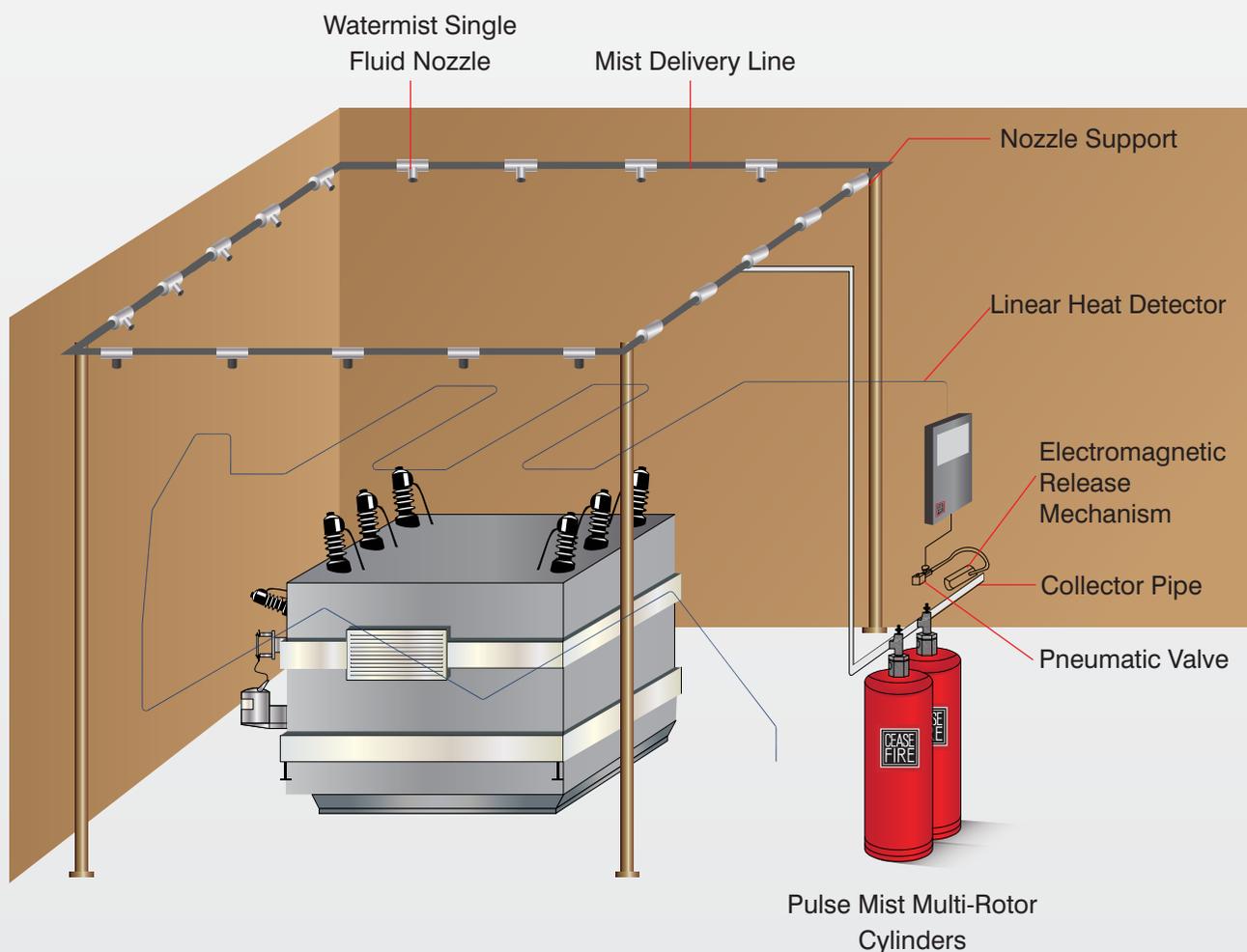
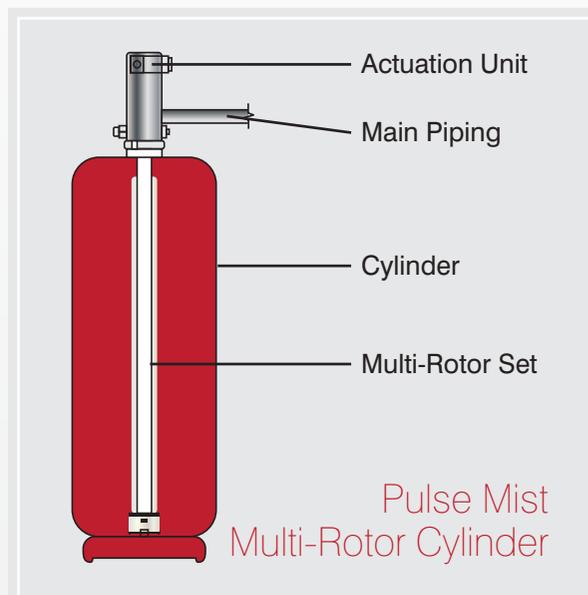
Can potentially replace a building's sprinkler system as it works faster than water, resulting in less fire damage and doesn't soak the premises in the process of putting out the fire.

Apart from the Pump Driven System, there's also a Watermist Auto-Quell System for smaller local applications – The Self Contained Pulse Mist Based System.

## Pulse Mist Based System:

The Pulse Mist Based System has been specially designed for smaller environments, or for areas where the fire hazard is likely to be in an enclosed space (such as a transformer room). The extinguishing agent for the transformer is stored in cylinders attached to the network of pipes and detectors.

This system also includes pressurised cylinders filled with water, available in sizes ranging from 12 ltrs - 100ltrs, rigged to the system via a manifold. A Multi-Rotor System propels water into the tubes. And a Single Hood Schrader Valve and a Multi Hood Pneumatic Spring Ball Valve release the cylinder contents as soon as a drop in pressure is detected.



## Ceasefire Design Cell:



No two transformers are alike. By offering the most flexible system configurations in the industry, Ceasefire provides the most efficient protection for facilities. Believing that the most effective fire solutions are the ones that are customised according to the unique characteristics of the area being protected, Ceasefire has established the Ceasefire Design Cell (CDC).

Functioning as the single touch point for all safety and security needs, CDC is manned by fire experts and managers with years of experience in fire safety under their belts. As a part of Ceasefire's 360 degree protection solution, the Ceasefire Technical Survey team visits your facility and conducts a detailed study to understand its vulnerabilities and requirements.

They survey the premises and work out requirements by taking dimensions and the size of the transformer and other fire threats in the area. The entire data is passed to the Ceasefire Design Cell, who design the complete system comprising the components, detection mechanism, delivery mechanism and delivery lines.

The design is then reviewed by the Technical team and the BOQ/BOM is prepared. Once the blueprint for the fire safety system has been finalised, Ceasefire's expert Installation team oversees installation and testing.

The Ceasefire Team also train you and your staff to use the fire safety system. Post installation, the Service team maintains and services the system through Intensive Ceasefire Care Unit (ICCU).

### **Benefits:**

- An exhaustive planning process, executed by engineers with years of experience.
- State-of-the-art solutions and products in association with world leaders.
- Design and installation of your Auto-Quell System overseen by professionals, ensuring delivery of a high quality, reliable, Watermist-based system.

## Ceasefire today:

360° lifesaving fire and safety solutions. More than 3,000 new customers a month. A product sold every 61 seconds. A life saved every 9 minutes. A presence in over 300 cities and towns. Backed by a team of 2,000. 400 lifesaving products – from green

fire extinguishers that can tackle any kind of fire to a state-of-the-art 3-tier security system that's one of the most foolproof systems in the world – Ceasefire has it all. We're equipped and ready to protect your premises.

## Applications:

Apart from transformers, this system can be used for other areas and applications.

- Generators
- Genset canopy
- Engines: electric, diesel and petrol
- Earth movers
- Automobiles: buses, cars and trucks
- Food processing units
- Small food manufacturing units
- Moving kitchens in campers and catering vans
- Electrical substation
- Factories
- Hangar protection
- Total building/big room protection
- Railways: locomotive, pantry car, coaches, etc
- Metro trains
- Industrial setups
- Any production unit where you don't want chemicals to halt operations
- Areas where oil or other inflammable fuels are present





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