

**tyco**

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*Fire & Integrated  
Solutions*

fighting fire with water mist  
the *intelligent* use of water

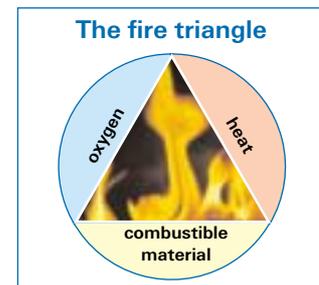
*a vital part of your world*

**MicroDrop**<sup>®</sup>



# increasingly, mist is a must

For a fire to survive, it relies on the presence of the three elements of the fire triangle, these being oxygen, heat and combustible material. The removal of any one of these elements can suppress or extinguish a fire.



MicroDrop™ high pressure water mist by Tyco goes further. It removes two elements of the triangle, heat and oxygen, achieving this by dispersing water at a typical 100-bar pressure through specifically designed nozzles. Generally, as system pressure increases the water droplet size decreases. This, in turn, causes the surface area of the water mist to increase significantly.

The larger the surface area, the more effective the system becomes in rapidly reducing temperature and oxygen at the flame front. In the event of a fire, a minimum of just 1 litre of water per minute flows through each nozzle, dependent on application. In addition, the system will bind smoke particles to reduce smoke damage. This makes the MicroDrop® system an extremely effective fire protection medium that significantly reduces asset damage and operational down-time in all "business critical" applications.

## one brand, one team, more expertise

For over a decade, Tyco Fire & Integrated Solutions have been leaders in water mist technology. During that time we have developed recognised expertise within the Automotive, Food and Internet Service Provider industries.

with a Pan-European approach to high-pressure water mist that will enable us to further improve existing system applications and develop exciting new ones.

Looking forward, our new product, MicroDrop® high pressure water mist by Tyco - the result of a strategic partnership with Danfoss Semco A/S of Denmark - will provide Tyco Fire & Integrated Solutions

### Droplet size comparison

	Sprinkler
	Low pressure water mist
	MicroDrop® high pressure water mist by Tyco



# applications across many markets

Add the concept of water mist to Tyco's reputation for delivering world-class services in fire protection, and you have a key reason why customers across the board are opting for a solution that is 100% environmentally sound and harmless to users.

For many users, the small amount of water used in high pressure water mist systems and reduced consequential damage, helps to attract lower insurance premiums. Installing MicroDrop® can be a good investment in several ways.

## from food processing...

Food processing is a case in point. Mist has proved to be very effective in protecting deep fat fryers and galley hoods and ducts. Fire is extinguished without the risk of personal injury, which can occur when water splashes into hot oil. MicroDrop® is efficient, clean and non-contaminating. Furthermore, post discharge clean-up downtime and consequential damage are minimal.

## ...to automotives...

The automotive industries, where fire risks can be high, are finding water mist a perfect solution in fire protection for engine test cells, rolling roads, hydraulic pits, industrial ovens and paint spray booths. Water mist typically uses less than 10% of the water used in a deluge system, with most of it evaporating. Also, because mist cools cables and metal surfaces, less damage occurs and production can re-start sooner.

## ...to all these applications

- In **Power and Utilities**, MicroDrop® can be used for turbine enclosures, unenclosed indoor turbines, enclosed and unenclosed diesel engines, wind generators and turbines, ductwork, cable tunnels, indoor transformers and compressors and other machinery.

- **Marine** applications span accommodation units, machinery spaces, kitchen and general areas.

- **Railway and subway** applications include underground areas and tunnels.

- In **Data Processing**, computer centres, control rooms and server areas with ceiling heights of up to 5 metres.

- **Archiving** applications cover premises such as museums and paper archive stores.

- **Property** applications include bedrooms and atria in hotels, classrooms and halls in schools and colleges, shop premises and store rooms in retail centres, prison cells, offices and public areas of many kinds.

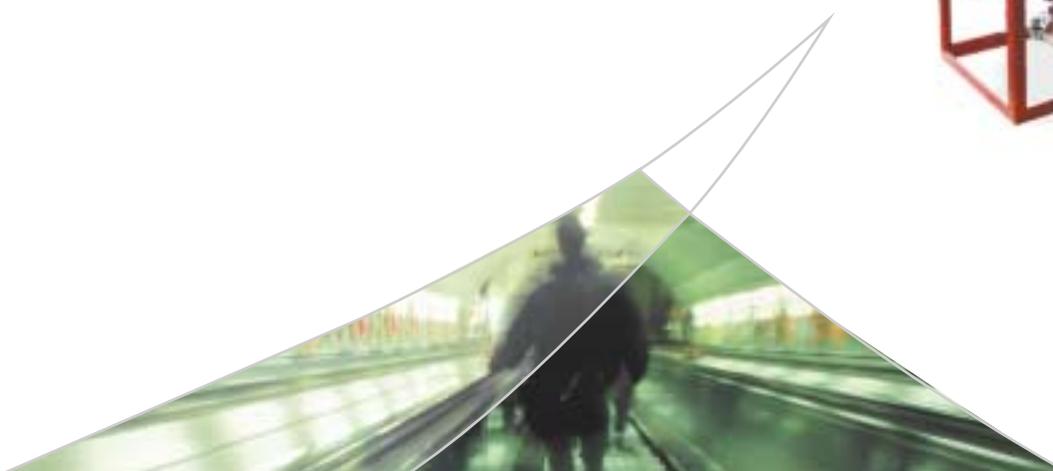
The list doesn't end there. Other specific applications include **car stackers**, **production facilities** and **warehouses**, **woodmills** and **church towers**.



Nozzles (sealed bulb)



Pump Unit





# the right product, the right approach

MicroDrop® systems depend on water supplied from either a dedicated pump system or cylinder system. Our pump systems typically operate at 100 – 120-bar to provide a continuous water flow to the nozzles. These systems are most suitable for protecting larger fire risks, particularly in large spaces or where ordinary combustible fire risks are present.

They can be used for both dry pipe (open nozzle systems) where the system is activated manually or from an automatic detection system allowing water mist to be discharged simultaneously from all nozzles in a zoned area. Alternatively, wet-pipe systems can be used that incorporate sealed, glass-bulb-activated detector nozzles. In this instance, only the nozzles affected directly by the fire will open to allow the discharge of water mist.

MicroDrop® cylinder systems have a limited discharge time depending on the amount of stored water but are more cost-effective than pump systems for smaller applications.

The cylinder units use containers pressurised with nitrogen at 200-bar to discharge a number of non-pressurised water-filled cylinders. These systems are ideal for the protection of smaller risks and can be skid-mounted, allowing easy transportation and installation.

# the right people, the right approvals

Each Tyco Fire & Integrated Solutions system is designed and installed by qualified specialists with years of experience. We are total solution providers in fire protection and safety.

The expertise of our engineers extends to all types of mechanical and electrical fire protection equipment from the simplest to the most advanced fire protection technology.

Throughout Europe, the Middle East and Africa our technical specialists conduct high-pressure water mist tests for specific applications to meet the sophisticated fire

protection needs of our clients. At Tyco Fire & Integrated Solutions, we not only say we can solve a problem; we physically prove to our clients that we can do what we say.

This approach has culminated in Tyco Fire & Integrated Solutions having more approvals for its products and services than any other organisation. Also, it is no coincidence that key members of our technical development teams have been invited to become members of the various CEN fire protection standards committees to help develop future “standards of excellence” within the fire industry.

## MicroDrop® system approvals include:

- Lloyds Register of Shipping (LRS)
- Det Norske Veritas (DNV)
- VdS Schadenverhütung (VdS)
- Factory Mutual (FM)



# always at your service

Our customer service strategy is to provide you with the best products, services and after-sales support. At Tyco Fire & Integrated Solutions, service and maintenance means more than merely overhauling equipment. It's about response times, problem solving and genuine commitment to the client. By combining national resources with the knowledgeable contribution of local personalised support from our regional bases, we deliver results customers can depend on 24 hours a day, 365 days a year.

## measuring performance

We measure customer delivery through Key Performance Indicators (KPI's) that monitor service and maintenance performance against our customers' Service Level Agreements (SLA's). In this way customers receive the levels of service that suit their needs – precisely.

## a broad spectrum

Our approach goes beyond the usual supplier and customer relationship. Our aim is to work with you as an expert partner who understands your goals and helps you to meet and exceed them.

## our services cover...

- Consulting
- Planning
- Project Management
- Design
- Installation
- Commissioning and Functional Testing
- Test and System Verification
- Training and Documentation
- Service, Maintenance and After-Sales Support





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*a vital part of your world*

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