

**I wish I had a
flexible FM
Approved Water
Mist Solution to
fit any industrial
oil cooker.**

I wish I could protect my industrial fryer installation with a fire **protection solution** that helps minimize collateral damage and helps achieve business continuity.

(BUSINESS OWNER)



I wish I could offer customers the **best Water Mist** solution to meet their installation needs, from a choice of Industrial Fryer Protection (IFP) systems.

(CONTRACTOR/ENGINEER)



I wish my policy holders could have a reliable Low Pressure **FM Approved** solution for their industrial fryer installation requirements.

(AHJ/INSURER)



Wish granted!

FM Approved **Water Mist Solution** for Industrial Fryer Protection (IFP)

- / AquaMist IFP from Tyco provides flexible fire protection solutions for even the most stringent project requirements
- / Ease of installation, dependability and comprehensive approvals are combined for cost-effective solutions
- / AquaMist IFP helps minimize repair and cleaning costs, as well as downtime in the event of a fire
- / FM Approved solution
- / Fully integrated solution for compatibility between detection and suppression systems

For more information visit www.tycoaquamist.com

 AquaMist

IFP: Industrial Fryer Protection



INDUSTRIAL FRYER PROTECTION

Industrial fryers are cookers commonly used in the food industry to produce consumables, such as breaded meats, potato products and pre-cooked snacks. They contain large amounts of cooking oil (up to 19,000 litres or 5,000 US gallons) and operate at temperatures of up to 354°C (670° F). This combination of extreme heat and fuel source can create a significant fire risk. Fire can occur if oil reaches its auto ignition temperature (AIT), or if ignition sources are introduced above the flash point. Large volumes of oil, once heated, maintain high temperatures and therefore fire risk for a long time. Cooling the oil is critical to help avoid re-ignition. This can be difficult, considering the energy efficient design of modern industrial oil cookers, which makes cooling a slow process.

A fire incident presents a major risk to any business. Fire can affect operations across entire facilities, causing potential loss of equipment, assets and production time. Fire incidents in the food industry tend to be especially costly due to stringent food hygiene policies and the mission critical nature of the fryer. AquaMist IFP Solutions offer cost savings to manufacturing businesses and insurance companies via reduced downtime and minimized clean-up costs.

Tyco AquaMist Industrial Fryer Protection (IFP) is an oil cooker fire suppression solution, which can be utilized for large and small-scale industrial applications. Available as a centralized electric pump, or localized stand-alone water supply, AquaMist is flexible enough to protect the largest and smallest applications cost effectively.

AquaMist IFP includes Water Mist nozzles, combined with Fire Detection technology to provide an integrated solution to help protect the hood area, fines box and exhaust stacks. AquaMist IFP is tested and approved by FM. To obtain FM approvals, Water Mist must provide full extinguishment in various fryer configurations, including hood up and hood down arrangements.

Water supply for standard or large-scale IFP can be provided by a Tyco Mist Control Center (MCC). The MCC is a Pump-based Skid Solution. Alternatively, a stand-alone IFP water supply can be provided by the Tyco Red-E Mist Supply Skid System.

Industrial Fryer Protection (IFP) Options

The fire protection solutions that can be used are CO₂, Water Spray and Water Mist. The industry accreditations, advantages and disadvantages of each solution are summarized in the table below:

AGENT	INDUSTRY STANDARDS	ADVANTAGES	DISADVANTAGES
CO ₂	NFPA12 BS5839 Part 4/ CEA4007/ISO6183	Cost-effective	H&S issues Reduced cooling effect Not supported by FM
Water Spray	FM Approved (for water density of 20mm and above)	Cost-effective	High risk of thermal shock Flood risk High water consumption
Water Mist	FM5560 / BS8489	High cooling effect Low water consumption	Increased installation costs

IFP Components

The Aquamist solution consists of:

- Customized IFP nozzles
- Customized valve assembly
- Red-E Mist Supply Skid stand-alone IFP solution
- AquaMist pump skid system (MCC Unit) large-scale IFP solution
- Fully integrated fire detection technology

Flexible IFP solution to fit any oil cooker installation

Large-Scale IFP

Low pressure Water Mist solution for multiple oil cookers

The Tyco MCC-based AquaMist IFP System is recommended to help protect multiple oil cookers in large-scale industrial applications. The MCC Pump Skid Package is the self-contained Control Center of the AquaMist System.

The compact skid unit has been designed and assembled to ease system installation and to meet the most stringent project requirements.

Advantages:

- High flexibility of nozzle installation reduces costs
- Extensive fire test program designed to perform in multiple scenarios
- Fully integrated solution for compatibility between detection and suppression systems
- FM Approved

Stand-Alone IFP

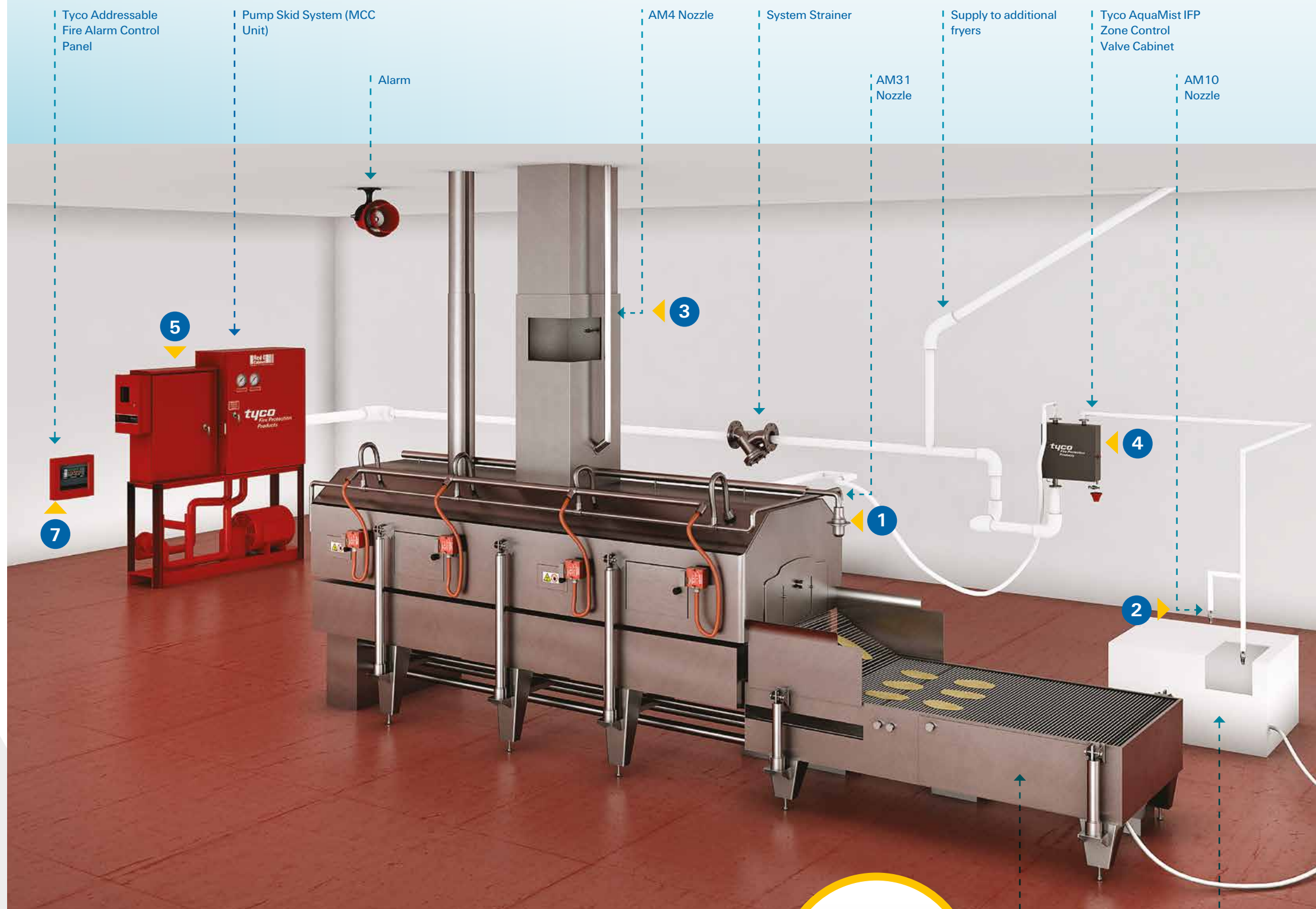
Specially designed to protect 1 or 2 oil cookers

The stand-alone IFP AquaMist solution is a low pressure FM Approved Water Mist fire suppression solution for small-scale industrial fryer applications, where specifically only 1 or 2 oil cookers are required. The solution offers fire protection for minimum installation requirements and is the only low pressure FM Approved solution on the market.

The Red-E Mist Supply Skid, an important component of the system, is available in two sizes. The 600 gallon (2271 liter) skid consists of one 600 gallon (2271 liter) water tank with four (4) nitrogen cylinders and can supply a system with flow demand up to 60 gpm (227 lpm) for a duration of 10 minutes. The 1200 gallon skid consists of two (2) 600 gallon (2271 liter) water tanks with eight (8) nitrogen cylinders and can supply a system with a flow demand up to 120 gpm (454 lpm) for 10 minutes.

Advantages:

- Does not require external electrical supply
- Ideal to protect 1 or 2 oil cookers
- Does not require separate water tank or supply
- FM Approved



MCC-Based AquaMist IFP System

For large scale industrial applications (i.e. multiple cookers) (TFP2240)

Water supply for small-scale applications (1 or 2 cookers) is provided by the Tyco Red-E Mist Supply Skid System (TFP2241). Not to be used in conjunction with Zone Control Valve Cabinet.

AquaMist

Customized IFP Nozzles:



AM31 Recessed Nozzle
Key Features: Tech Datasheet (TFP2202) (nozzle) and TFP2242 (recessed fitting)
Provides protection to the hood and outlet
K = 0.30 GPM/psi^{1/2} (4.3 LPM/bar^{1/2})
Min press: 170 psi (11.7 bar)
Max press: 250 psi (17.2 bar)
Water Density: 0.2 gpm / ft² / (8 lpm / m²)
¾ NPT threaded / ¾ NPS socket weld for quick installation and easy maintenances
Include a cap/chain for cleanliness and to prevent blockage. Also available with high temperature plug
Optional protective cap to prevent nozzle blockage and oil contamination
Material: Stainless Steel



AM10 Nozzle
AM10 Key Features: Tech Datasheet (TFP2210)
Protection for the fines box
K = 0.24 GPM/psi^{1/2} (3.5 LPM/bar^{1/2})
Min press: 170psi (11.7 bar)
Max press: 250psi (17.2 bar)
Water Density
½ inch NPT Thread Connection
Stainless Steel
Available with recess fitting or high temperature material blow-off cap for quick installation and ease of maintenance



AM4 Nozzle
AM4 Key Features: Tech Datasheet (TFP2204)
Protection for the exhaust stacks
K = 0.24 GPM/psi^{1/2} (3.5 LPM/bar^{1/2})
Min press: 155psi (10.7 bar)
Max press: 250psi (17.2 bar)
Water Density
½ inch NPT Thread Connection
Stainless Steel
High temperature material blow-off cap



Zone Control Valve Cabinet
Key Features: Tech Datasheet (TFP2250)
Hood: 1 ½ NPS Flange
Fines Box: ¾ NPS Flange
Dual mode operation: "full system" and "fines box only"
All stainless steel components within NEMA 4x enclosure for caustic wash-down
Integrated electronics (I/O modules, release peripherals, etc.)
Valve cabinet is not needed for stand alone version



Pump Skid System (MCC Unit)
Key Features - EMCC Pump skid Tech Datasheet (TFP2270)
3 sizes: 50, 100, 150 gpm
Wet Valve version for IFP applications
Customized for voltage, frequency, etc. compatibility
FM Approved for use with Tyco AquaMist IFP systems
NFPA 20 compliant
Pump start "on demand"



Red-E Mist Supply Skid
Key Features - Red-E Mist Supply Skid Tech Datasheet (TFP2272)
Utilizes intermediate pressure single-fluid atomizing technology to generate a fine water spray
Full system discharge to all protected portions of the industrial fryer equipment
Cross zone automatic fire detection and control system

Fully Integrated Fire Detection Technology



Detection and Controls
Addressable detection architecture can be utilized. Conventional architecture permitted with Red-E Mist Supply Skid
Control panel options at customer's choice - FM
All components to be either FM Approved or CE marked (Europe)
Off the shelf components

Control Panel Options
Simplex 4010ES
AutoPulse Z30-AR

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Global strength. Local expertise. At your service

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