





# 3 Industry (산업)

 <p><b>테스트 시설</b></p>	<p><b>3.1 Suzuki Maruti test facility, Gurgaon - Haryana (India)</b></p> <p><i>Water mist system for protection of 30 test cells with intermediate floor area and including some smaller technical rooms</i></p> <p><b>Project period:</b> 2018 <b>Cooperation partner:</b> Everest Kanto Cylinder Limited</p> <p><b>Project description:</b></p> <ul style="list-style-type: none"> <li>- System design for activation of three test cells simultaneously</li> <li>- Central Power Pack supplies water for two buildings, which are divided by a road for service staff and plant vehicles</li> <li>- Protection of test cells with in total 324 nozzles on the ceiling and in the pit, plus 1700m installed piping network</li> <li>- Project management and installation by our local partner</li> <li>- Commissioning and training of maintenance staff carried out by AQUASYS</li> </ul>
  <p><b>파워 플랜트 (변압기 보호)</b></p>	<p><b>3.2 GKI Power Plant, Tyrol (Austria)</b></p> <p><i>Water mist System for protecting transformers in the power plant.</i></p> <p><b>Project period:</b> 2018 <b>Client:</b> Tiroler Wasserkraft AG</p> <p><b>Project description:</b></p> <ul style="list-style-type: none"> <li>- Protection of two 34,423 KVA transformers, each including 15,1 tons of oil</li> <li>- Central pump unit with 136l/min water flow and 5m<sup>3</sup> storage tank for 30min continuous spraying time</li> <li>- Installation and Project management by AQUASYS</li> </ul>
 <p><b>육류 가공 공장 (육류 및 생산센터 보호)</b></p>	<p><b>3.3 Marcher Fleischwerke, Villach (Austria)</b></p> <p><i>AQUASYS water mist to protect an innovative meat business in Carinthia.</i></p> <p><b>Project period:</b> 2017 <b>Project management:</b> Siemens AG</p> <p><b>Project description:</b></p> <ul style="list-style-type: none"> <li>- Improving the production reliability of the logistics and production centre with the highest meat disassembly capacity in Austria, coming in at 700 pork sides per hour.</li> <li>- Protection of 11,000 m<sup>2</sup> of production and storage space, as well as refrigeration and freezing facilities</li> <li>- Collaboration with Siemens AG as general contractor on this project</li> <li>- Installation, commissioning and acceptance by AQUASYS</li> </ul>

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변전소  
(변압기 보호)

### 3.4 BEST transformer stations, Mumbai (India)

*AQUASYS fire-fighting system for protecting transformer stations run by Mumbai's largest energy supplier.*

**Project period:** 2013–2014  
**Expansion:** 2017  
**Client:** Brihanmumbai Electricity Supply and Transport

**Project description:**

- Gas-powered water mist system for self-sufficient operation
- Twenty-one steel cylinders supply the necessary water for suppression and the required nitrogen for use as a propellant
- 2013–2014: Protection of five transformers
- 2017: Protection of a further four transformers



클린 룸  
(PT 제조)

### 3.5 TDK production facility, Berlin (Germany)

*Water mist protection for clean rooms used in the manufacture of pressure transmitters at the TDK-EPC production facility in Berlin.*

**Project period:** 2016–2017  
**Project management:** AQUASYS  
**Client:** TDK Berlin

**Project description:**

- Protection of a production area of 3700 m<sup>2</sup>
- Increased installation requirements due to clean room conditions
- Safeguarding of the fire protection system with a 400 kVA USC system



변전소  
(변압기 보호)

### 3.6 DEWA substations, Dubai (United Arab Emirates)

*AQUASYS fire-fighting system to protect substations operated by the largest energy supplier in Dubai.*

**Project period:** 2016–2019  
**Project management:** AQUASYS

**Project description:**

- Protection of 16 substations and transformers operated by the Dubai Electricity and Water Authority (DEWA)
- Recognised by the independent Institute for Fire Protection and Safety Research (IBS), Linz in the United Arab Emirates
- Fire tests to verify the fire-fighting effect of the water mist

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마린디젤엔진 테스트 벤치

### 3.7 MAN engine test benches, Augsburg (Germany)

*Fire-fighting water mist system to protect test benches for marine diesel engines.*

**Project period:** 2012–2017 (in expansion phases)  
**Project management:** AQUASYS

**Project description:**

- Protection of multiple test benches for large diesel engines and turbomachinery
- Explosion-proof design for affected system parts
- Design, planning and installation in a close partnership between the on-site fire service, AQUASYS and the accepting body VdS



엔진 테스트 벤치

### 3.8 BRP-Rotax engine test benches, Gunskirchen (Austria)

*Protection of test benches in the development and production centre for innovative drive systems used in the power sports sector.*

**Project period:** 2003–2017 (in expansion phases)  
**Client:** BRP-Rotax GmbH & Co KG

**Project description:**

- Water mist system to protect the critical development test benches
- Protection of end-of-line test benches
- Installation, acceptance, commissioning and annual maintenance by AQUASYS



엔진 테스트 벤치

### 3.9 AVL engine testing centre, Pune (India)

*Protection of engine test benches and technical areas across a total of 31 test rooms using a high-pressure water mist system.*

**Project period:** 2015–2017 (in expansion phases)  
**Client:** AVL India

**Project description:**

- Protection of the engine test benches and technical areas of the AVL testing centre in Pune
- Installation and project management by local partners
- Acceptance and commissioning by AQUASYS

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**안경 제조공장**  
(표면처리, 전기도금, 코팅 장비보호)

### 3.10 Silhouette International AG, Linz (Austria)

*Austrian-made premium eyewear protected with AQUASYS fire-fighting system.*

**Project period:** 2011–2013 (in expansion phases)  
2016 (additional work)  
**Client:** Silhouette International AG

**Project description:**

- Protection of the surface treatment area and the electroplating, milling and coating equipment located there, across a total of three floors
- Improved safety across the entire production chain in order to restore operational readiness as quickly as possible in the event of fire

Project management, installation and commissioning by AQUASYS



**폐기물 처리공장**

### 3.11 Derby Waste Treatment Centre, Derby (England)

*Water mist protection for a recycling centre with an annual capacity of 190,000 tonnes of waste.*

**Project period:** 2016  
**Cooperation partner:** PROTEC CAMERFIELD LTD

**Project description:**

- A broad range of fire loads called for universal fire protection
- Protection for fire classes A, B, C and F through the unique mode of action of water mist
- Specially designed supply unit due to installation on the first floor
- Commissioning by AQUASYS



**화학 단지**

### 3.12 InfraServ chemical park, Gendorf (Germany)

*AQUASYS fire-fighting system for the largest chemical park in Bavaria.*

**Project period:** 2015–2019  
**Project management:** AQUASYS

**Project description:**

- Equipping the on-site fire service with high-pressure supply units for mobile use
- Semi-stationary fire protection for technical areas, cable and machine rooms throughout the site with local feed points
- Expansion of the high-pressure unit to include removable frames, ensuring rapid installation and disassembly

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철강 공장

### 3.13 Plansee, Reutte/Tyrol (Austria)

*Fire-fighting system to protect an entire line of special steel mills*

**Project period:** 2015  
**Project management:** AQUASYS

**Project description:**

- Protection of hydraulic areas, rolling mills and electrical rooms
- Connection of the fire-fighting and fire detection systems to the existing control system
- Project management, installation and commissioning by AQUASYS



생산 공장

### 3.14 Kosme GmbH, Sollenau (Austria)

*Water mist to protect a new production hall for filling and packaging facilities.*

**Project period:** 2015  
**Client:** Kosme GmbH

**Project description:**

- Protection of the entire production hall with a production area of 7200 m<sup>2</sup>
- Complete installation and commissioning of the system in just 2.5 weeks
- More than 600 nozzle heads installed



은행 데이터 센터

### 3.15 BNP Paribas data centre, Marne (France)

*AQUASYS fire-fighting system for protection of a data centre operated by the French bank. According to the client's specifications, the water mist would have to protect a server in case of fire without impairing the functionality of neighbouring servers.*

**Project period:** 2015  
**Cooperation partner:** Uxello

**Project description:**

- Project-specific CFD simulation and validation in real-life fire tests.
- A full shutdown is not necessary in case of fire. The unaffected computers remain in operation.
- Immediate triggering without warning time due to water mist technology which is harmless to humans.

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구리 제련소 및 정련소

### 3.16 Głogów Copper Smelter and refinery, Głogów (Poland)

*Plug-and-play fire-fighting system to safeguard the energy supply to the plant.*

**Project period:** 2014–2015  
**Client:** KGHM Polska Miedź S.A.

- Project description:**
- Protection of two separately installed transformers, each with an output of 50 MVA
  - Installation and commissioning of the system in just three weeks thanks to pre-production of a ready-to-use container in Linz
  - Acceptance and approval of the system by an independent fire protection institute (IBS, Linz)

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도넛 제조 공장

### 3.17 Kuchen-Peter industrial bakery, Hagenbrunn (Austria)

*Fire protection with high-pressure water mist for Austria's biggest doughnut manufacturer.*

**Project period:** 2014  
**Client:** Kuchen-Peter Backwaren GmbH

- Project description:**
- Protection of approximately 24,000 m<sup>2</sup> of production, packaging and storage space
  - Protection of the high-risk fryer conveyor line – used to bake 30 million doughnuts per year – with project-specific HHS approval for an operative area of 300 m<sup>2</sup>
  - 10 km of pipeline and 1800 nozzle heads installed



종이 공장

### 3.18 Mayr-Melnhof Karton GmbH paper factory, Frohnleiten (Austria)

*Renovation of the fire-fighting system to protect a paper machine used for the production of recycled cardboard.*

**Project period:** 2014  
**Client:** Mayr Melnhof Karton

- Project description:**
- Protection of the pre-dryer section, Yankee cylinder and after-dryer section of the paper machine
  - Targeted area definition and control enables an efficient safety concept
  - Additional wall hydrants with AQUASYS Water Mist Guns for manual fire-fighting

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변전소  
(변압기 보호)

### 3.19 Reißeck II pumped-storage power plant, Carinthia (Austria)

*AQUASYS fire-fighting system for Europe's highest transformer station.*

**Project period:** 2014  
**Client:** Verbund AG

- Project description:**
- Securing the energy supply for 250,000 households
  - Protection of the four transformers at the 430-MW Reißeck II pumped-storage power plant
  - Complete installation at 1800 metres above sea level in just two months
  - Project-specific real-life fire tests for verification and approval



설탕 공장

### 3.20 Agrana sugar factory, Tulln (Austria)

*AQUASYS fire-fighting system for Austria's only sugar producer.*

**Project period:** 2014  
**Client:** Agrana

- Project description:**
- Protection of turbine cellars, hydraulics room and electrical switchgear with water mist
  - From order to commissioning in just two months
  - Fire-fighting and detection system for a total area of 1000 m<sup>2</sup>



단열 설비 공장

### 3.21 Knauf thermal insulation plant, Tyumen (Russia)

*Water mist protection for a modern production plant with an annual capacity of 65,000 tonnes of thermal insulation products.*

**Project period:** 2013  
**Client:** Knauf Insulation

- Project description:**
- Protection of the suction ducts in the drying unit for fire prevention and to prevent fires from spreading to other system parts
  - Automated maintenance workflows to prevent the build-up of dirt in the nozzles
  - Noise emission of the pump units reduced to max. 80 dB

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단조프레스 보호

### 3.22 Schuler forging presses, Waghäusel (Germany)

*Fire-fighting system for forging presses in the competence centre for hydraulic press systems within the Schuler Group*

**Project period:** 2012  
**Client:** Schuler

- Project description:**
- Protection of the head unit, plunger and tool loading area
  - Central pumping station designed as a turnkey container solution



데이터 센터

### 3.23 Leibniz data centre, Garching (Germany)

*A water mist system replaces the gas extinguishing system at the data centre of the Bavarian Academy of Sciences and Humanities.*

**Project period:** 2005/2010–2011 (expansion)  
**Project management:** CLIMAPLAN  
**Client:** State Construction Office Munich II

- Project description:**
- Protection of the raised floors for cabling, emergency generator, electrical distributor and technical rooms
  - 6 km of pipeline and 1600 installed nozzle heads in use
  - First installation in 2005, facilities upgraded in 2010 and 2011



자동차 제조 공장

### 3.24 Maruti Suzuki car manufacturing facility, Gurgaon (India)

*Fire-fighting system for test chambers in the Maruti Suzuki production facility.*

**Project period:** 2011  
**Client:** Maruti Suzuki India Limited

- Project description:**
- Protection of vehicle test chambers for end-of-line testing, area to be protected: 700 m<sup>2</sup>
  - Nozzle head in the raised floor and on the ceiling of the vehicle test chambers
  - Installation and project management by local partner

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춤추는 분수 시스템

### 3.25 The Dubai Fountain, Dubai (United Arab Emirates)

*Fire-fighting system for the world's second-largest choreographed fountain system.*

**Project period:** 2011  
**Cooperation partner:** Vision Safety LLC

- Project description:**
- Protection of the entire technical area with a capacity of 83,000 litres/min. and a water fountain height of up to 150 m
  - Installation and project planning by local partner
  - Acceptance and commissioning by AQUASYS



폐기물 처리 공장

### 3.26 KAB refuse sorting facility, Klagenfurt (Austria)

*Water mist system for the most innovative and foremost waste disposal company in Carinthia*

**Project period:** 2011  
**Client:** KAB Klagenfurt

- Project description:**
- Safeguarding of individual refuse sorting halls with water mist barriers along the hall walkways
  - Protection of the wall openings between the individual sorting halls required for the conveyor belts
  - Fire detection by AQUASYS



반도체 공장

### 3.27 Elmos Semiconductor AG, Dortmund (Germany)

*Water mist fire protection for more than 300 million semiconductors per year*


**Project period:** 2005–2011 (in expansion phases)  
2005–2006 first construction stage  
2007–2008 second construction stage  
**Client:** Elmos Semiconductor AG



- Project description:**
- Protection of semiconductor production activities in the clean room area
  - First installation in 2005, facilities upgraded in 2008 and 2011
  - Supply, installation, commissioning and annual maintenance by AQUASYS



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 <p><b>위험물 보관소</b></p>	<h3>3.28 Moosmayr hazardous goods store, Hofkirchen (Austria)</h3>
	<p><i>Fire-fighting system for a hazardous goods store containing tobacco and tobacconists' supplies</i></p>
	<p><b>Project period:</b> 2009 <b>Client:</b> Moosmayr GmbH</p>
	<p><b>Project description:</b></p> <ul style="list-style-type: none"> <li>– Protection of the entire storage area on an HHS basis (storage materials such as liquid butane gas and lighter fuel on pallets in block storage)</li> <li>– Elimination of the need for foam additives thanks to the unique effect of water mist</li> <li>– No need for fire-resistant sealing or other additional structures for the sprinkler system thanks to the use of water mist</li> </ul>

  <p><b>제철소</b></p>	<h3>3.29 voestalpine steel, Linz (Austria)</h3>
	<p><i>High-pressure water mist technology for fire protection at this ultra-modern steelworks in Linz.</i></p>
	<p><b>Project period:</b> from 2005 (in expansion phases) <b>Client:</b> Voestalpine</p>
	<p><b>Project description:</b></p> <ul style="list-style-type: none"> <li>– Equipping the on-site fire service with high-pressure water mist units for mobile use at various locations</li> <li>– Protection of the cable shafts for the main energy supply lines to the steelworks</li> <li>– Option of simple expansion of the safety concept with further feed points</li> </ul>

  <p><b>제철소</b> <b>(전해질 아연 도금 라인)</b></p>	<h3>3.30 voestalpine steel, Linz (Austria)</h3>
	<p><i>Water mist for protecting the electrolyte galvanising line at the steelworks.</i></p>
	<p><b>Project period:</b> 2008 <b>Client:</b> Voestalpine</p>
	<p><b>Project description:</b></p> <ul style="list-style-type: none"> <li>– Prevention of damage to the system and contamination of the electrolyte by extinguishing water</li> <li>– Prevention of downtimes at this production bottleneck</li> <li>– Use of the demineralised water used in the process as the fire-fighting agent</li> </ul>