We have fire ...





... under control

www.accuro.at

# Quality and expertise.

FIRE PROTECTION IS OUR BUSINESS.



Specialist expertise coupled with commitment - ACCURO has prided itself on this motto since it was founded in 1976. Our unique market position today allows us to offer our customers the best solutions for the required applications - be it a sprinkler system for a warehouse in Vienna, a gas extinguishing system for a power plant in the Andes, or a foam extinguishing system for an oil depot in the Sahara. ACCURO can design and supply a suitable extinguishing system to meet every requirement and guideline. ACCURO supplies what the customer needs - not what we need to sell from our own production.

Stationary extinguishing systems protect people, assets and the environment. Incipient fires must be detected and brought under control or extinguished as quickly as possible. If this does not happen, a small flame can develop into a raging fire in just a few minutes. Only automatic, stationary extinguishing systems can protect people, companies and the environment against unforeseeable damage - trained personnel or fire fighters are not always on hand to intervene in time. Automatic extinguishing systems detect and suppress fires at an early stage.

ACCURO's expertise lies in:

- consulting,
- planning,
- supplying,
- installation and
- maintenance

of stationary fire extinguishing and fire alarm systems. We have already shown that we can meet these various demands a thousand times.

ACCURO understands how to unite the entrepreneurial spirit, flexibility, quality and high level of specialist expertise of employees for the benefit of the customer.

## Milestones.



FOUNDING OF THE COMPANY ACCURO // In the beginning, the company primarily specialised in the design of automatic extinguishing systems and the trade of fire fighting and fire prevention products.

RESTRUCTURING THE COMPANY ACCURO // The increased integration of industrial specialists allowed ACCURO to specialise in the construction of automatic extinguishing systems in addition to their design.

CERTIFICATION ACCORDING TO ISO 9001:2000 // This was necessary due to the strong growth of ACCURO and the market situation. The resulting opportunities to better and more efficiently structure the rapidly growing company, further enhanced the quality of the business activities.

FOUNDING OF THE FIRST SUBSIDIARY IN EASTERN EUROPE // In this year and the following years, ACCURO expanded significantly throughout Eastern European countries and was able to establish a firm position on the market long before their accession to the EU.

FOUNDING OF ACCURO SONDERLÖSCHANLAGEN GMBH // An ever increasing area of operation within the fire protection industry made the founding of this subsidiary company necessary. ACCURO Sonderlöschanlagen GmbH specialises in the design, construction and maintenance of gas extinguishing and fire alarm systems and is operative abroad in the construction of fire protection systems in power plants, refineries and other industrial companies.

FOUNDING OF ACCURO TURKEY // In order to further develop our market position, it became necessary to establish a subsidiary company in this booming part of Eurasia. ACCURO was able to quickly establish itself on the Turkish market and implement fire protection projects for both Turkish and international companies.

CERTIFICATION ACCORDING TO BS - OHSAS18001:2007 - SAFETY MANAGEMENT SYSTEM // A risk-free and safe working environment is of utmost priority to ACCURO. For this reason, the company has focused its efforts on establishing an advanced health, safety and environmental protection management system which is aligned with customer requirements.

CONSTRUCTION OF A NEW BUILDING COMPLEX which includes additional office space, a combined warehouse and assembling building and approx. 4000m² open air storage facility.

CERTIFICATION ACCORDING TO ISO TS 29001. // This standard is an extension to the international acknowledged ISO 9001. Certification

CERTIFICATION ACCORDING TO ISO TS 29001 // This standard is an extension to the international acknowledged ISO 9001 Certification and was developed between ISO and the international oil & gas industry under the lead of API (American Petroleum Institute).



The development of the first sprinkler system dates back to the middle of the last century. This technology stemmed from the American textile industry which often endured devastating fires due to the highly flammable material cotton. Through the installation of an open piping network which could be manually pressurised with water in the event of a fire, lives and machinery could be protected effectively for the very first time.

Over the years, a wide range of sprinkler systems were developed and successfully implemented in many different areas. The English and German word "sprinkler" stood and still stands for a functional unit consisting of a nozzle, a closure and a heat-dependent release mechanism. Nowadays, sprinkler systems have of course become more complex and efficient. Since the founding of ACCURO has worked intensively in the area of sprinkler technology and has designed and constructed countless systems in the past few decades.

- > TIMBER-PROCESSING COMPANIES
- INDUSTRIAL COMPANIES
- ▶ LOGISTICS CENTRES
- PRODUCTION HALLS
- WAREHOUSES
- UNDERGROUND CAR PARKS
- SHOPPING CENTRES
- > EXHIBITION HALLS
- HOTELS
- HOSPITALS AND CARE HOMES
- ▶ HIGH-RISE BUILDINGS
- OFFICES
- AIRPORTS
- > AND MUCH MORE



#### AREAS OF USE:

- REFINERIES AND FUEL DEPOTS
- TIMBER-PROCESSING INDUSTRY
- > ROLLING MILLS
- POWER PLANT SYSTEMS
- FOAM STORAGE WAREHOUSES
- AIRCRAFT HANGARS
- TRANSFORMERS
- GENERATORS
- FURNACES
- CABLE DUCTS AND CONDUITS
- WASTE BUNKERS
- FIREWORK AND AMMUNITION FACTORIES
- STAGES
- > AND MANY MORE





Water spray extinguishing systems protect objects and rooms which are susceptible to fire outbreaks. Whilst sprinkler systems selectively spread extinguishing water over the fire when necessary, water spray or water deluge systems can be used to extensively spray, cool and therefore protect larger technical objects. Furthermore, the flue-gas cleaning effect offers excellent personal protection in the event of a fire.

In principle, the system technology of water spray extinguishing systems corresponds to that of a sprinkler system (fixed pipelines with nozzles, valve stations, release mechanisms and a water supply). However, a crucial difference can be found in the fact that all extinguishing nozzles distributed over a protected area or object are always open and therefore ensure a rapid and targeted water flow over the extinguishing area once the system has been activated. In the event of a fire, individual system groups can be controlled automatically (electrically, pneumatically, hydraulically) or activated by hand.



## HIGH-PRESSURE WATER MIST EXTINGUISHING SYSTEMS

Water mist systems are a new technology in the development of automatic extinguishing systems. In contrast to conventional sprinkler systems, this system uses the extinguishing effect of very small droplets of water (water mist).

The water mist consists of extremely small droplets of water. The diameter of a droplet of water mist is approx.  $50 \mu m$ . Under high pressure (> 35 bar), extinguishing water is compressed through the stainless steel pipes to the extinguishing nozzles. Water mist is produced through the special design of the nozzles. The necessary pressure is generated through high-pressure pumps or alternatively through pressurised gas cylinders (nitrogen).

The combination of an optimal droplet size and a dispersion of the droplets under high pressure, ensures a deep penetration of the water mist into the fire source and a rapid cooling of the flue gases. In addition, flue gases are cleaned from the air and this allows the fire brigade to enter the extinguishing area more quickly.

- > HOTELS, HOSPITALS
- ARCHIVES, HERITAGE BUILDINGS, WAREHOUSES
- PAINTING LINES
- GAS TURBINES AND GENERATORS IN POWER PLANTS
- > TEST STANDS FOR ENGINES (CAR MANUFACTURING INDUSTRY)
- > HIGH RISES, OFFICES
- > SUBWAY STATIONS
- > DATA CENTRES, LABORATORIES, LIBRARIES
- > PRODUCTION MACHINES
- MACHINE PROTECTION ARRANGEMENTS, CABLE DUCTS
- > COMPENSATION TO THE ARCHITECTURAL FIRE PREVENTION
- OIL AND GAS APPLICATIONS
- AUTOMATIC PARKING SYSTEMS
- > IN THE MARINE AND OFFSHORE INDUSTRY

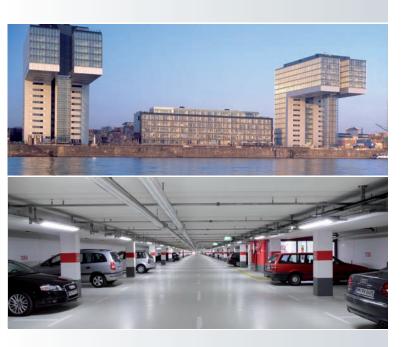






#### AREAS OF USE:

- SCHOOLS, UNIVERSITIES AND OTHER EDUCATIONAL ESTABLISHMENTS
- OFFICIAL AND GOVERNMENT BUILDINGS
- OFFICE AND ADMINISTRATION BUILDING
- BANKS, CONFERENCE ROOMS
- > IT ROOMS, DATA CENTERS
- HOSPITALS, RETIREMENT HOMES AND OTHER CARE FACILITIES
- HOTELS, RESTAURANTS.
- HOSTELS, APARTMENT HOUSES
- > CHURCHES, DATA PROCESSING ROOMS
- PARKING GARAGES / UNDERGROUND PARKING
- RAILWAY STATIONS
- DOUBLE FLOORS AND FALSE CEILINGS



# ECONAQUA® LOW PRESSURE WATER MIST SYSTEM

EconAqua needs up to 85% less water than classic sprinkler systems. This level of efficiency is usually only achieved by expensive high pressure water mist extinguishing systems which operate at a working pressure of 100 to 140 bar. For EconAqua a maximum working pressure of 16 bar is sufficient. EconAqua is a sprinkler system that uses water efficiently and hence reduces the need to store large quantities of water for the fire protection system. It is therefore used where limited water is available, either through lack of available supply or where the end-user is concerned about the damages caused to valuable inventory through high amount of water used during activation of the sprinkler system. In addition the system can be used for protection of buildings with limited possibilities for water supply or with lack of space for large piping networks. EqonAqua is also an ideal system for retrofitting of older or existing buildings.

EconAqua systems are suitable for protecting the following risk classifications:

- LH (Light Hazard)
- > OH1 (Ordinary Hazard Group 1) (which do not involve risks to production)
- > OH2 (Ordinary Hazard Group 2) (only multi-level car parks / underground garages)
- > OH4 (Ordinary Hazard Group 4) (assembling rooms)



The technology contained in foam extinguishing systems is highly complex and can therefore rarely be summarised in just a few words. As with all other extinguishing technologies, the application or fire load also determines the given solution for foam extinguishing systems. A wide range of guidelines must be taken into consideration for the design and layout of such systems. Extinguishing foam is essentially a mixture of water, foaming agent and air. The mixture ratio of these three substances is adapted depending on the application.

The extinguishing effect comes from the heat-resistant foam forming a solid blanket over the flammable materials. This creates a cooling, shielding and suppressive effect depending on the type of foam. The foam isolates the flames from the oxygen supply and suppresses the development of toxic flue gases. The chemical reaction for combustion is therefore halted and the flame is extinguished. Thanks to ACCURO's strong commitment within the area of power plant construction and oil production, a significant number of different models have been introduced onto the market. ACCURO exclusively uses components from renowned manufacturers with the necessary approval.

- > CHEMICAL INDUSTRY
- > REFINERIES
- POWER PLANTS
- WASTE INCINERATION PLANTS
- > LOGISTICS HALLS WITH A HIGH PERCENTAGE OF PLASTIC
- AIRCRAFT MAINTENANCE HALLS
- HELICOPTER LANDING PADS
- > OFFSHORE PLATFORMS AND SHIPS
- > TIRE WAREHOUSES
- COAL SILOS
- > PIPELINE PUMPING STATIONS
- FUEL OIL STORAGE TANKS
- FUEL OIL PUMPING STATIONS



#### AREAS OF USE:

- TRANSFORMER AND GENERATOR PROTECTION
- OIL AND FUEL TANK PROTECTION
- WAREHOUSES
- STORAGE WITH FLAMMABLE LIQUIDS (PAINT, OTHER CHEMICAL SUBSTANCES)
- FUELING AND REFILLING STATIONS
- > RECYCLING AND WASTE DISPOSAL FACILITIES
- > SYNTHETIC FIBER PRODUCTION AND STORAGE
- PLASTIC AND TIRE STORAGE
- CHIPBOARD MANUFACTURING
- CABLE TUNNELS
- PAPER MACHINES
- ROAD AND RAIL TUNNELS
- HELIPORTS, TIRE WAREHOUSES





One Seven® uses Compressed Air Foam as extinguishing agent which will be produced in special foam generation module. Depending on the flow rate an environmental friendly foam concentrate according to the fire classification will be added to the water with a low proportioning rate of 0,3% to 0,6%. Within the patented foam generation module air or inert gas (e.g. Nitrogen) will be added at a fixed rate to the water-foam concentrate. The synthetic foam generated with the unique One Seven® technology is of very high knock-down efficiency with constant quality. It is universally applicable on all fires loads and water usage is reduced up to 75% in comparison to traditional extinguishing techniques.

The One Seven® Standard System comprises of a water pump, an air compressor, a One Seven® foam generator unit, a control system and the foam rotors. It remains active for a longer period of time and is therefore designed for larger risks such as warehouses, tunnels and hydrocarbon tanks.

The One Seven® Stored Energy System is a complete energy self-sufficient system which does not require any pump or compressor. It has been developed to cover smaller (limited) risks for a shorter time period.



Despite the increasingly modern extinguishing agents and technologies available, water remains the most commonly used agent to extinguish fire. Water is also suitable for fighting incipient and large-scale fires. One condition for both cases is, of course, a sufficient extinguishing water supply.

Supply pipes are primarily made from steel, cast iron or polyethylene (PE, HDPE). ACCURO uses the most suitable material depending on the application and area. In addition to cast iron pipes, ACCURO also specialises in using FM-tested underground polyethylene pipes (PE, HDPE). Polyethylene is distinguished by durability and a high resistance to environmental influences.

#### TECHNOLOGY:

- > CAST IRON UNDERGROUND PIPES
- > POLYETHYLENE UNDERGROUND PIPES (PE, HDPE)
- ➢ GALVANISED OR PAINTED SUPPLY PIPES
- NIRO STEEL SUPPLY PIPES
- INTERNAL HYDRANTS
- EXTERNAL HYDRANTS
- > SUCTION POINTS
- > DRY RISERS



#### **DESIGNS ACCORDING TO:**

- > TRVB
- **VDS**
- > FM GLOBAL
- > NFPA
- > AND MANY MORE

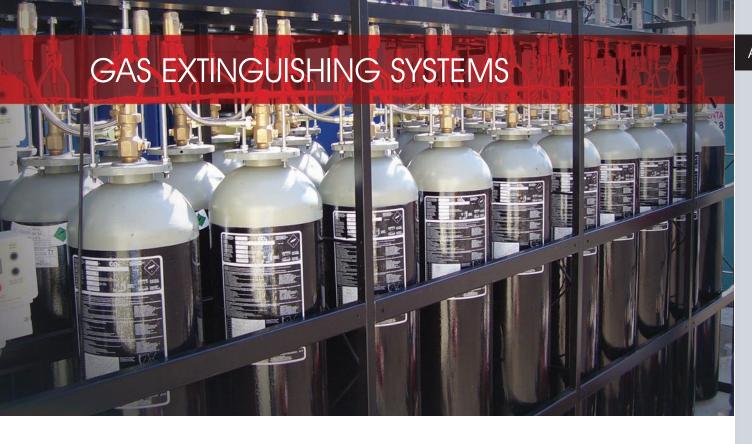




The pumping station is at the heart of every stationary extinguishing system. This is where the necessary pressure is generated for the extinguishing water and downstream extinguishing areas and units.

ACCURO technicians design and construct their sprinkler systems according to standard international regulations. Whether these are VdS, TRVB, FM or NFPA regulations - ACCURO is always the right partner for you.

Upon request from the customer, we also offer pumping stations in container solutions. The main advantage of this for the customer is that the time-consuming assembly works on-site are no longer required. This solution is particularly worth considering for our projects abroad.



Gas fire extinguishing systems extinguishes fire by introducing the agent into the protected area and maintained it within the prescribed holding time. Fire extinguishment happen by heat reduction for clean agent system like FM-200, Novec-1230 and HFC-125. Inert gas fire extinguishing system (IG-01, IG-55, IG-100, IG-541 and Carbon Dioxide) works by oxygen reduction. These types of fire extinguishing system is used primarily when water would not be effective and could induced damaged to the high value equipment.

#### Chemical Gases:

- > FM200™ HFC227
- ▶ HFC 125
- NOVEC 1230™

#### Inert gases:

- > Argon IG01
- Nitrogen IG100
- > Argonite® IG55
- > Inergen® IG541

#### CO<sub>2</sub> (carbon dioxide):

- ➤ CO<sub>2</sub> High Pressure
- ➤ CO<sub>2</sub> Low Pressure

- > IT SYSTEMS AND COMPUTER ROOMS
- **ARCHIVES**
- ➤ EMERGENCY CALL CENTRES
- > FLIGHT NAVIGATION AND CONTROL TOWERS
- MOBILE PHONE TRANSMITTER STATIONS
- > INTERNET SERVICE PROVIDER CENTRES
- > TELEVISION, RADIO AND CONTROL ROOMS
- > ART GALLERIES AND MUSEUMS
- MEDICAL FACILITIES, LABORATORIES. CONTROL ROOMS
- > OFFSHORE DRILLING PLATFORMS
- > ENGINE TEST FACILITIES
- EMERGENCY GENERATORS
- BATTERY COMPARTMENTS, LOW-VOLTAGE
- > CABLE COMPARTMENTS, AND MANY MORE



#### TECHNOLOGY:

- > FIRE ALARM SYSTEMS
- EXTINGUISHING CONTROL PANELS
- ASPIRATING SMOKE DETECTORS
- > ALARM ROUTING SYSTEM
- ALARM TECHNOLOGY
- OPTICAL SMOKE DETECTORS
- > HEAT DETECTORS
- MULTI-CRITERIA DETECTORS (OPTICAL/THERMAL)
- FLAME DETECTORS
- ASPIRATING SMOKE DETECTORS (VERY EARLY SMOKE DETECTION)
- LINEAR HEAT DETECTORS (LINEAR DETECTION CABLE)
- PUSH-BUTTON ALARMS AND MANY MORE





A fire alarm system is an alarm that receives signals from different fire alarms, assesses these and then triggers the appropriate action. A wide range of different technologies can be used to detect a fire.

ACCURO is able to plan and construct a wide range of different brands including Esser, Kentec, Notifier®, Mircom and Hochiki. This versatility allows ACCURO to plan in a highly flexible manner and work according to customer requirements.

In addition to selecting the right type of detector (smoke, temperature, fire alarm, etc.), the correct engineering method is also extremely important. A high-quality detector that has been installed in the wrong place, will not achieve the desired effect.

ACCURO offers highly qualified and experienced technicians to correctly position the detectors. ACCURO therefore ensures that all areas and applications are covered.



Depending on fire risks and the possible fire loads, special fire fighting solutions can also be taken into consideration.

ACCURO has a suitable solution for almost every area and application, be it automatic or manual extinguishing systems.

Whether it is powder, foam, gas or any other special extinguishing media, ACCURO is the right choice.

#### Technology:

- > Powder extinguishing systems
- Monitor extinguishing systems
- Vehicle extinguishing systems
- Kitchen and deep fat fryer protection
- Spark extinguishing systems
- and many more

- WASTE INCINERATION AND SPECIAL WASTE DISPOSAL PLANTS
- > COAL AND CHEMICAL PLANTS
- > TRANSFER STATIONS FOR GAS AND OIL
- **>** BOILER PLANTS AND FUEL DEPOTS
- > COMPRESSOR AND PUMPING STATIONS
- > OIL DEPOT
- MILLS AND HYDRAULIC SYSTEMS
- > ALL KINDS OF VEHICLES
- HELICOPTER LANDING PADS
- OFFSHORE SOLUTIONS
- OIL BATHS
- HARDENING PLANTS
- > INDUSTRIAL DEEP FAT FRYERS
- AND MUCH MORE















Many fire protection systems were built decades ago according to the valid international guidelines at that time. However, they were never, or only poorly maintained. Different modernisations were largely carried out half-heartedly and insufficiently. This was not only the situation in developing and emerging countries, but also affected many systems in Western industrialised countries.

Many companies (oil producers, power plants, steel works, etc.) were exposing themselves to huge fire risks due to poor risk management. Unfortunately, the danger that this posed to humans, the environment and the existence of the company was very often underestimated. ACCURO therefore specialises in bringing outdated systems up to standard. The necessary costs involved can often only be calculated after an in-depth functional test. Depending on the condition of the systems, parts have to be repaired or replaced. This does not only present a logistical challenge, but also requires a high level of specialist knowledge and expertise.



The key benefits for Project Owners and EPC Contractors working with ACCURO are:

- > Our engineers have great expertise and experience in the design of complete firefighting systems for the total plant. All state of the art firefighting technologies such as water and foam based systems, gas extinguishing systems, high-pressure water mist systems, pumping stations, fire alarm and gas detection systems can be provided out of one hand
- > Knowledge of all required regulations and design criteria such as NFPA, FM, VdS, API, ...
- Independent sourcing of quality equipment with project required approvals such as UL, FM, EN, VdS, GOST, LPCB, VNIIPO, APCI, CNPP, etc.
- > Availability of certified and well trained supervisors for erection and commissioning

# Since 1976 worldwide more than 3000 projects successfully realized. Legend:

#### REFERENCES:

ACCURO Fire Protection Systems has completed several firefighting projects on a turnkey basis for well-known International Project Owners and EPC Contractors such as:

- > ABB AG
- MAN DIESEL & TURBO
- SIEMENS
- > ANDRITZ HYDRO
- MITSUBISHI HEAVY
  INDUSTRIES (MHI)
- **>** DANIELI
- **>** PRIMETALS
- > PETROFAC
- > KAR GROUP
- > MGI MASS GLOBAL

- MAGNA
- > HYUNDAI ENGINEERING & CONSTRUCTION
- **>** ALSTOM
- ▶ GAZPROM
- > EREN ENERGY
- **LUKOIL**
- ARABIAN GULF OIL COMPANY
  (AGOCO)
- DRÄXLMAIER
- **EGGER**



HEPP - Hydro Electrical Power Plant



GPS - Gas Power Station (Simple Cycle)



CCPP - Combined Cycle Power Plant



O&G - Oil & Gas



CP - Chemical plants



CFPP - Coal Fired Power Plant



DPP - Diesel Power Plant



METAL - Metal industry



W&P - Wood and paper industry



AUT - Automobile industry





# Reliability and expertise.

FIRE PROTECTION IS OUR BUSINESS.



#### Quality management system according to EN ISO 9001:2008

The fulfilment of quality that is both expected from customers and laid down in the legal guidelines of ACCURO, is primarily guaranteed through a quality management system according to the international standard EN ISO 9001: 2008 and legal guidelines. With the implementation of the standard, the management board of ACCURO is therefore complying with their organisational and supervisory duty which in turn emphasises their awareness of quality.

Quality management according to ISO TS 29001 for Oil & Gas projects
The ISO TS 29001 standard is an extension to the international acknowledged ISO 9001
Certification and was developed in cooperation of ISO and the international oil & gas industry under the lead of API (American Petroleum Institute).

ACCURO defines with this certification its commitment to the additional requirements for a quality management system for engineering, procurement, installation, commissioning and maintenance of projects and services in the oil & gas industry.

#### Safety management system according to BS OHSAS 18001:2007

ACCURO is constantly focusing on bringing its advanced safety, health and environmental management system in line with the requirements of the customer. A risk-free and safe working environment is our utmost priority and must be an objective of all of our employees. ACCURO commits to fulfilling and complying with the relevant legal, official and customer-related requirements.

#### Environmental Management System according to EN ISO 14001

Certification according to ISO 14001 stands for operational environmental protection within our organization and guarantees sustainable economic activities and environmentally safe production. We strictly follows this standard within our integrated management system and therefore ACCURO constantly improves its corporate environment.









# ACCURO Headquarters, warehouse and logistics centre

**OUR COMPANY BUILDINGS** 

#### ACCURO Warehouse and logistics centre

Our new building complex was constructed in 2013 and includes additional office space, a combined warehouse and assembling building and approx. 4000m² open air storage facility. It is located close to our Mondsee headquarters in 5310 Tiefgraben by Mondsee, Am Schusterbach 3.

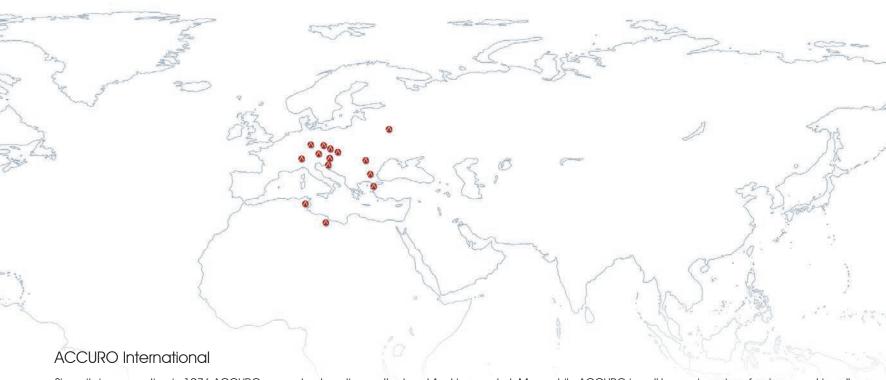




#### **ACCURO** Headquarters

Headquarters of the ACCURO Brandschutzanlagen GmbH and of the ACCURO Sonderlöschanlagen GmbH in 5310 Mondsee, Matthäus-Much-Straße 7.





Since its incorporation in 1976 ACCURO was not only active on the local Austrian market. Meanwhile ACCURO is well known in various foreign countries all over the world. Due to our independent market position we are able to offer our clients our best service and support worldwide in realizing their projects. In addition to our foreign subsidiaries ACCURO maintains close cooperation with partner companies in the local markets abroad.

#### Establishments & Representatives

ACCURO Austria

ACCURO Germany

ACCURO Hungary

ACCURO Croatia

ACCURO Slovakia

ACCURO Bulgaria

ACCURO Czech Republic

ACCURO Romania

ACCURO Slovenia ACCURO Russia

ACCURO Switzerland

ACCURO Tunesia

ACCURO Turkey

ACCURO Libya

... under control

ACCURO
Fire Protection Systems

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