

survitec

# FIRE EXTINGUISHION PROTECTION AND DETECTION

SETTING THE GLOBAL STANDARD FOR FIRE  
SAFETY SOLUTIONS



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# PROTECTING OVER 1 MILLION LIVES EVERY DAY

When it comes to safety, Survitec is uncompromising. We exist to ensure that you operate with the most appropriate safety and survival equipment for your people and your customers. Our values drive this behaviour each and every day.

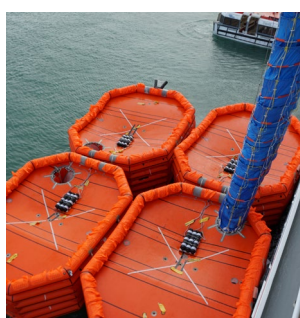
At the heart of Survitec are our people. The collective knowledge, skills and expertise of our diverse global community, made up of best-in-class experts, are critical to fulfilling our vision to be the world's most trusted company for critical safety and survival solutions.

It is why Survitec remains the world's leading manufacturer and supplier of safety and survival solutions worldwide, at the forefront of innovation, design, and application engineering.

Our rich heritage, dating back over 160 years, has earned Survitec a reputation as a trusted safety partner for operators worldwide, consistently delivering world-class safety solutions of value. Focusing on delivering exceptional levels of safety, reliability, and compliance, that go above and beyond the industry standard.

Whether you require complete safety asset supply and management solutions or one-off product sales or services, our dedicated teams are always ready to support you to find the right solutions for your business.

## #SurvitecForLife



# OUR VALUES

1

SAFETY AND REDUCING RISK IS INTEGRAL TO EVERYTHING WE DO

2

WE ARE COMMITTED TO DELIVER REAL VALUE AND CONFIDENCE TO OUR CUSTOMERS

3

WE CARE FOR OUR PEOPLE AND INVEST IN THEIR DEVELOPMENT AS INDIVIDUALS AND TEAMS

4

WE AIM FOR EXCELLENCE IN EVERYTHING WE DO

5

WE SEEK TO INNOVATE AT EVERY OPPORTUNITY

6

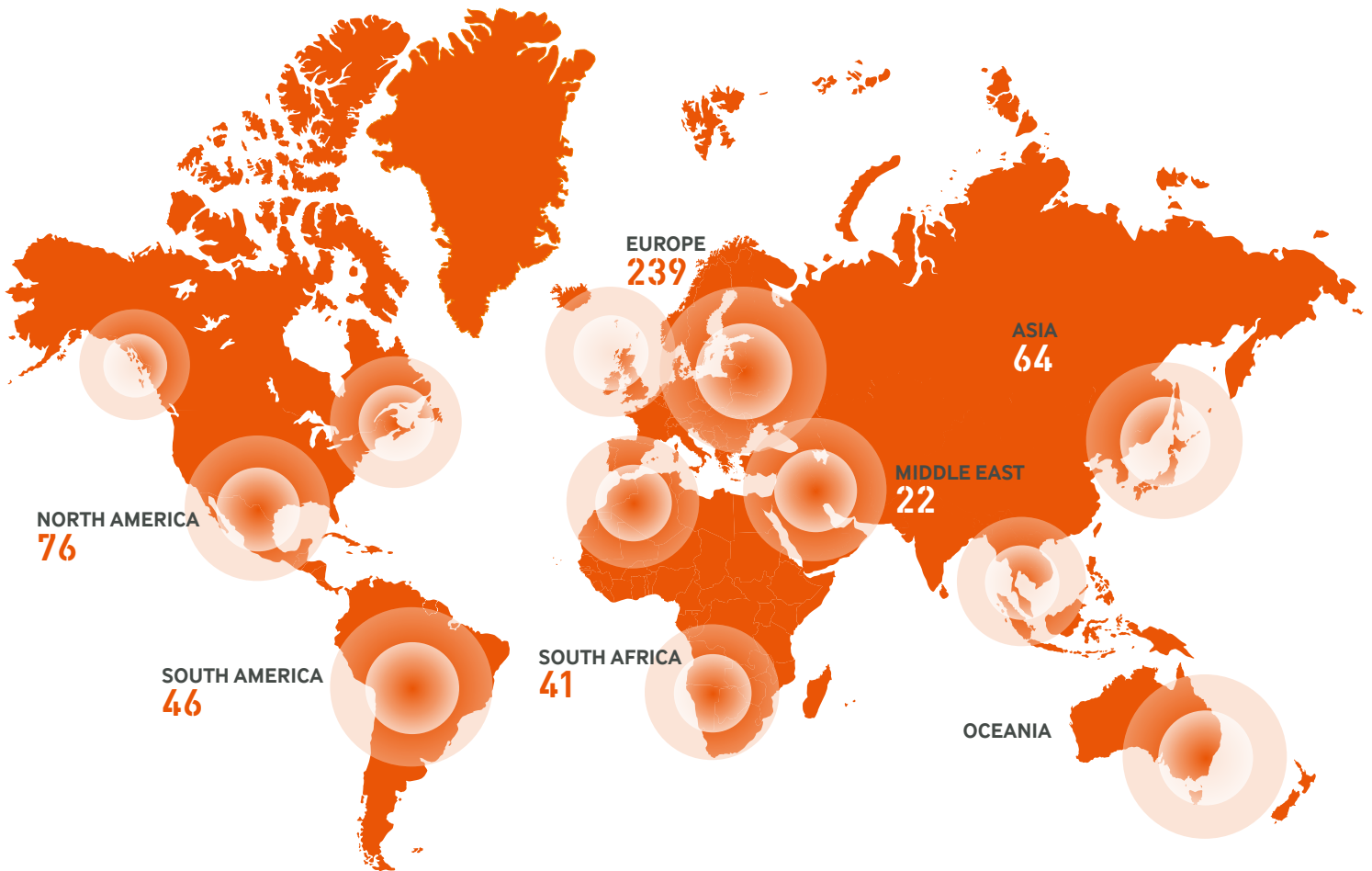
INTEGRITY: WE DO WHAT WE SAY WE WILL DO

At **survitec**, the foundations of how we act as a business are based on our **values**.

We strive to embed these values of **safety, people, customers, excellence** and **innovation**, all underpinned by **integrity**, in all that we do.

# DEDICATED GLOBAL SUPPORT

WORLD'S LARGEST SUPPLY AND SERVICE NETWORK



- 3000+ EMPLOYEES
- 700 TRAINED SERVICE ENGINEERS
- 8 MANUFACTURING FACILITIES
- 12 OFFSHORE SUPPORT LOCATIONS
- 70 LOCATIONS
- 410+ ACCREDITED SERVICE STATIONS
- COVERAGE AT 2,000 PORTS WORLDWIDE
- INTERNATIONAL PRESENCE IN 96 COUNTRIES
- 3 DNV-GL CERTIFIED TRAINING CENTRES



# SURVITEC FIRE SAFETY PROUDLY SUPPLYING FIRE SAFETY SOLUTIONS SINCE 1970

Keeping crew and passengers safe is the number one priority whilst at sea. Over many years we have supplied Fire Detection, Protection and Extinction solutions to the marine and offshore markets, in addition to acting as a through-life safety partner. Included in our portfolio is a range marine approved of loose equipment and a number of complete safety systems.

Through our innovative designs, our systems remain efficient and customers stay safe, all whilst keeping installation and operational costs low.

All Survitec fire safety products are compliant with SOLAS and are approved by major Flag and Class' approval standards, including MED approval where required. Our range of products are safe, cost efficient, easy to use and above all, offer customers peace of mind. Furthermore, they are supported by our global service network.



# SCOPE OF SUPPLY

## FIRE DETECTION

### FIRE DETECTION

#### Systems Service

|  | Systems | Service |
|--|---------|---------|
| • Fire Detection and Fire Alarm system     | •       | •       |
| • Sample Extraction Smoke Detection system | •       | •       |

## FIRE EXTINCTION

### WATER BASED

#### Systems Service

|  | Systems | Service |
|--|---------|---------|
| • Water Mist Local Application system                          | •       | •       |
| • Water Mist Total Flooding system                             | •       | •       |
| • Water Mist Accommodation system                              | •       | •       |
| • Water Mist Balcony system                                    | •       | •       |
| • Water Mist Galley system                                     | •       | •       |
| • Water Mist Duct system                                       | •       | •       |
| • Mobile Water Monitor   | •       | •       |
| • Water Mist Lance   | •       | •       |
| • Wet Pipe system for ro-ro spaces and special category spaces | •       | •       |
| • Deluge system for ro-ro spaces and special category spaces   | •       | •       |

### FIXED FOAM

#### Systems Service

|                              | Systems | Service |
|------------------------------|---------|---------|
| • High Expansion Foam system | •       | •       |
| • Deck Foam system           | •       | •       |
| • Helideck system            | •       | •       |
| • Deep-Fat Fryer system      | •       | •       |

### GAS BASED

#### Systems Service

|                              | Systems | Service |
|------------------------------|---------|---------|
| • 1230 Clean Agent system    | •       | •       |
| • Inergen Clean Agent system | •       | •       |
| • CO <sub>2</sub> system     | •       | •       |
| • FM 200                     | NA      | •       |
| • Argonite                   | NA      | •       |

### POWDER

#### Systems Service

|                                   | Systems | Service |
|-----------------------------------|---------|---------|
| • Dry Chemical Powder system      | •       | •       |
| • Dual agent system (Foam/Powder) | NA      | •       |

## FIRE PROTECTION

### INERT GAS

#### Systems Service

|   | Systems | Service |
|---|---------|---------|
| • Flue Gas system (FGS)                 | •       | •       |
| • Flue Gas Deck-House Modules           | •       | •       |
| • Inert Gas Generator system (IGG)      | •       | •       |
| • Inert Gas Deck-House Modules          | •       | •       |
| • Dual fuel Inert Gas Generator system  | •       | •       |
| • Dry Inert Gas Generator system (DIGG) | •       | •       |
| • Flex-inert system                     | •       | •       |
| • Flue-Generator system                 | •       | •       |

### NITROGEN

#### Systems Service

|   | Systems | Service |
|---|---------|---------|
| • Nitrogen Membrane system                                    | •       | •       |
| • Nitrogen Cylinder Central system                            | •       | •       |
| • Nitrogen Membrane Controlled and Modified Atmosphere system | •       | •       |

## LOOSE EQUIPMENT AND OTHERS

### GAS DISTRIBUTION

#### System Service

|                                 | System | Service |
|---------------------------------|--------|---------|
| • AC/OX Gas Distribution system | •      | •       |

### LOOSE EQUIPMENT

#### Products Service

|  | Products | Service |
|--|----------|---------|
| • Fire Extinguishers   | •        | •       |
| • Portable Fire Extinguishers  |          |         |
| • Wheeled Fire Extinguishers   |          |         |
| • Extinguishers Spare Parts & Accessories                              |          |         |
| • Foam Concentrates & Applicators                                      | •        | •       |
| • Fire Hoses & Accessories   | •        | •       |
| • Hoses, Hose reels and Binding tools                                  |          |         |
| • Couplings, Adaptors, Bland Cap, T piece, Spanner, Gasket and Washers |          |         |
| • Nozzle, Pump, Hydrants, Valves and Spares                            |          |         |
| • Cabinets for Fire Equipment  | •        | •       |
| • Miscellaneous Fire Equipment   | •        | •       |
| • Fire Blankets, Fire Buckets  |          |         |
| • Hand Alarm Bell, Emergency Break Glass Key Box                       |          |         |
| • Portable Gas Detector  | •        | •       |
| • Breathing Air  |          |         |
| • Breathing Air Compressors  | •        | •       |
| • Air Quality Check for BA Compressors                                 | •        | •       |
| • Breathing Air apparatus  | •        | •       |
| • Emergency Escape Breathing Device (EEBD)                             | •        | •       |
| • Fireman outfits  |          |         |
| • Fire Suits, Gloves, Boots, Helmets                                   | •        | •       |
| • Safety Torch ATEX  | •        | NA      |
| • Fire Axe & Fire Axe Cover  | •        | NA      |
| • Fire Fighters Line with Hook   | •        | NA      |
| • Fire Radios  | •        | •       |



When building a new vessel there are several things to consider, like a jigsaw with many pieces that all need to fit together. Safety of course will be high on the list for any vessel or operation type. At Survitec we aim to make the supply of all safety equipment required for your new build project as efficient as possible. We understand that what matters is both the reliability of delivery, continuity, compliance, expertise, the quality of the product supplied and most importantly value for money.

We also understand that owner/operators need to not only consider the initial supply but a long-term safety service solution. Our innovative product designs, competitive pricing solutions, SOLAS 360 complete offering and ongoing service solutions provide the winning formula.

# COMPLIANCE QUALITY EXPERTISE

YOUR TRUSTED SAFETY PARTNER  
FOR NEW BUILDINGS





## DEDICATED ENGINEER SUPPORT

Our dedicated engineering hub and two new build centres have been specifically designed to ensure we have the people in place to support our new build customers with their logistical needs including: engineering, delivery, commissioning and claim handling needs. In addition, our global procurement team, product specific technical sales managers and dedicated own equipment manufacturers (OEMs) put us in an extremely strong position to be able to handle all technical requirements and cater to specific needs from an operational perspective.

## SIMPLIFYING THE FULL SAFETY LIFECYCLE

### EFFICIENT

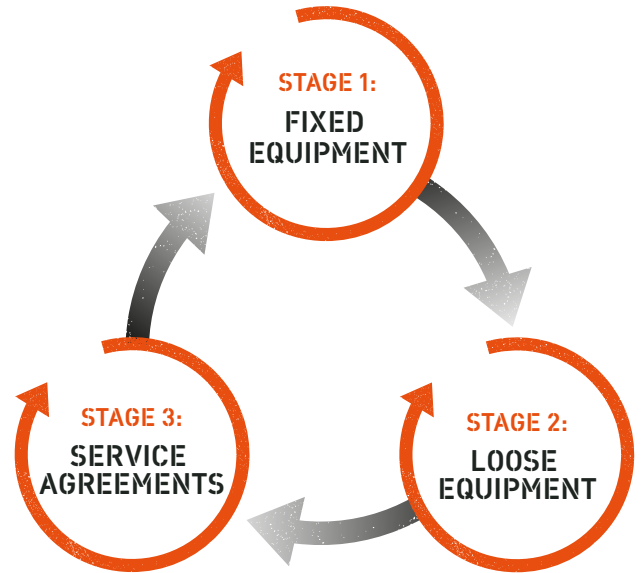
- One point of contact globally
- Full team of technical sales managers to offer technical support and regulatory advice
- Team equipped to deliver full project management
- Full range of loose and fixed safety equipment options

### RELIABLE

- On-time delivery and consistency of supply
- Market leading, high specification product design
- Highly experienced and qualified service engineers
- World leading brands with unmatched reputation
- Engineering and service report completed, designed to meet the needs of the vessel

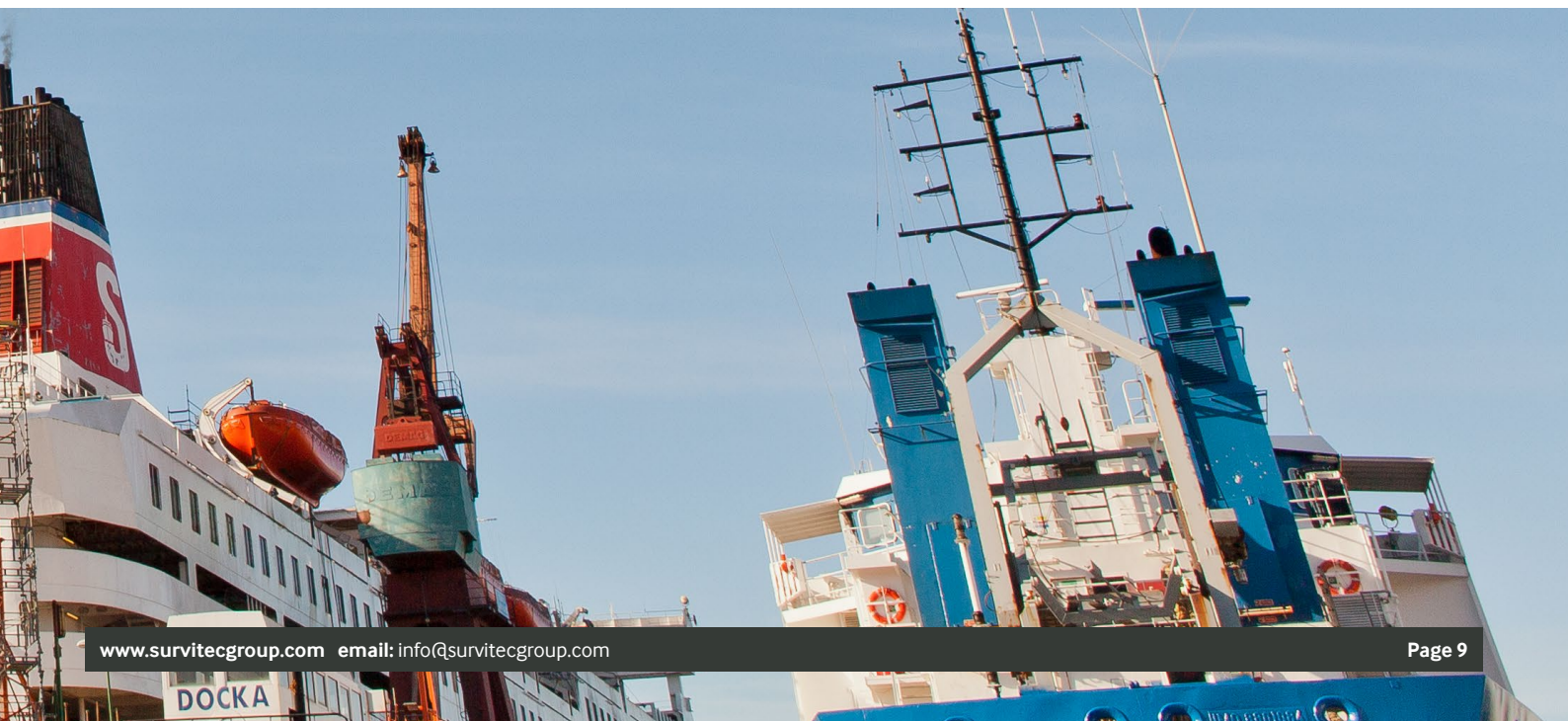
### COST EFFECTIVE

- Solutions within budget
- Value for money



ONGOING THROUGH LIFE SAFETY SUPPORT FOR OWNERS AND OPERATORS.

VALUE FOR MONEY AND SHORT DELIVERY TIME FOR YARDS.



# FIRE EQUIPMENT SERVICING, INSPECTION & MAINTENANCE



## OUR HISTORY

Survitec has experience of working with a vast range of multiband safety systems and equipment, built up over almost four decades as a market leader in the fire and safety service sector.

## OUR PEOPLE

Vessels are serviced by experienced Survitec multi-brand service technicians, all of whom have been trained by both Survitec trained engineers and the various original equipment manufacturer (OEM) centres, where focus is concentrated on the servicing and maintenance of marine firefighting systems and the requirements of IMO, SOLAS and the FSS Code.

## OUR SERVICE CAPABILITIES

Every 20 minutes, a Survitec service technician begins work on a new task and we complete more than 21,000 services annually on all makes and models of fire and safety systems and equipment.

## OUR COMMITMENT

We are committed to providing the highest ethical and technical standards of safety service and expertise to our global customer base and we work to ensure that our customers' vessels and crew remain compliant and safe at all times.

## OUR SERVICE AGREEMENTS

We know that management of safety service systems and equipment can be difficult and cumbersome due to various reasons:

- Changing rules & regulations
- Interpretation of rules & regulations
- Varying demands from different class societies and flag states

For over a decade, our customers have enjoyed the benefits and flexibility of Survitec's unique Safety Service Agreements. Whether a Fixed Price Agreement or full Safety Management Contract, the benefits include a predictable pricing schedule and a dedicated technical service coordinator who monitors vessel due dates and schedules servicing to take place in the most convenient ports.

## OUR APPROVED SERVICE STATIONS

Our customers have access to over one hundred ISO9001: 2015 approved fire service stations, each equipped with state of the art test equipment and operating in accordance with IACS, UR, Z17 approvals and governance. This ensures that a consistent service standard is achieved during a variety of services.



### Americas

Baltimore  
Buenos Aires  
Colon  
Corpus Cristi  
Halifax  
Houston  
Los Angeles  
Miami  
Montreal  
New Orleans  
New York  
Port of Spain  
Rio de Janeiro  
Saint John  
San Juan  
Santos  
Vancouver  
Vera Cruz

### Europe

Aalesund  
Aberdeen/Findon  
Algeciras  
Antwerp  
Barcelona  
Bergen  
Bilbao  
Bremerhaven  
Gdansk  
Genoa  
Gothenburg  
Hamburg  
Helsinki  
Istanbul  
Klaipeda  
La Coruna  
Las Palmas  
Liepaja  
Lisbon  
Liverpool  
London/Dartford  
Marseille  
Nantes  
Ostend  
Piraeus  
Riga  
Rostock  
Rotterdam  
Szczecin  
Tallinn  
Valencia  
Valletta

### Middle East & Africa

Doha  
Durban  
Fujairah  
Istanbul  
Jeddah  
Manama  
Suez

### Asia Pacific

Bangkok  
Bintulu  
Busan  
Dalian  
Darwin  
Fremantle  
Guangzhou  
Kaohsiung  
Kobe  
Kuala Lumpur  
Labuan  
Melbourne  
Qingdao  
Shanghai  
Singapore  
Sydney  
Tianjin  
Yokohama

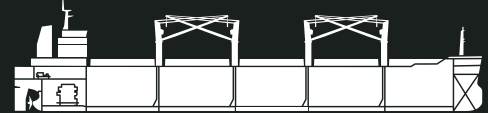
### Can't see your desired location on the list?

Contact us about our flying squad operation or advice on optional service stations available for your vessel.

# CHOOSING THE RIGHT FIRE SYSTEMS FOR YOUR VESSEL

## ALL VESSEL TYPES

- **Machinery space** - CO<sub>2</sub> system | Water Mist systems | High Expansion Foam system | 1230 Clean Agent system | Inergen Clean Agent system
- **Paint stores** - CO<sub>2</sub> system | 1230 Clean Agent system | Inergen Clean Agent system | Water Mist system
- **Galley exhaust duct** - CO<sub>2</sub> system | Water Mist Duct system
- **Galley** - Water Mist Galley system | Wet Chemical Deep-Fat Fryer system
- Loose equipment



## PRODUCT TANKERS

- **Cargo tanks and pipes** - Inert Gas Generator | Dual Fuel IGG | Flex IGG | Nitrogen Membrane system | Nitrogen Cylinder system | Deck Foam system

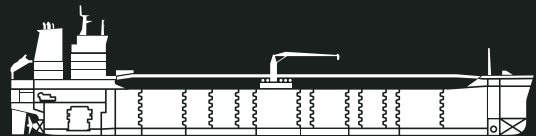
## OIL TANKERS

- **Cargo area** - Deck Foam system
- **Tanker stern or bow loading area** - Deck Foam system
- **Cargo tanks and pipes** - Flue Gas system | Inert Gas systems
- **Pump rooms** - CO<sub>2</sub> system | High Expansion Foam system



## CHEMICAL TANKERS

- **Cargo area, tanker stern or bow loading area** - Deluge system | Deck Foam system
- **Cargo tanks and pipes** - Inert Gas Generator | Dual Fuel IGG | Flex IGG | Nitrogen Membrane system | Nitrogen Cylinder system
- **Pump rooms** - CO<sub>2</sub> system



## GAS CARRIERS

- **Cargo tanks and pipes** - Nitrogen Membrane system
- **Compressor rooms** - CO<sub>2</sub> system | 1230 Clean Agent system
- **Deck area, bow or stern cargo handling area** - Dry Chemical Powder system | Deluge system

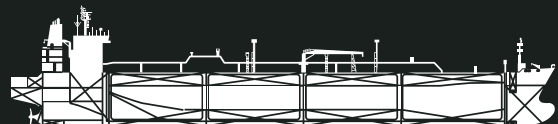
## LNG

- **Cargo tanks and pipes** - Dry Inert Gas Generator



## LPG

- **Cargo tanks and pipes** - Inert Gas Generator | Dual Fuel IGG | Flex IGG

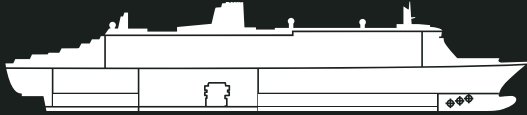


## LNG FUELLED VESSELS

- **Bunkering stations** - Dry Chemical Powder system
- **Cargo tanks and pipes** - Nitrogen Membrane system | Nitrogen Cylinder system

## CRUISE

- **Accommodation area** - Water Mist Accommodation system



## ROPAX

- **Car deck**
  - Water Deluge and Wet Pipe systems
- **Accommodation area**
  - Water Mist Accommodation system



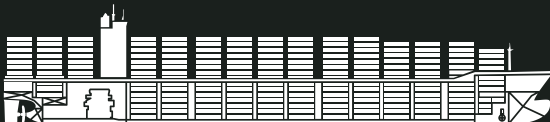
## CONTAINER VESSELS

Any ships designed to carry 5 or more tiers of containers on or above the weather deck

- **Container deck area** - Mobile Water Monitor

Any ships designed to carry containers on or above the weather deck

- **Containers** - Water Mist Lance



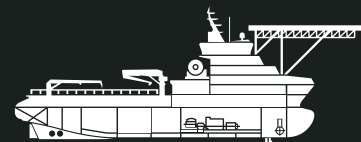
## OFFSHORE

- **Floating production and storage facilities and offshore structures**
  - Deck Foam system | Deluge system | Inergen
- **Helidecks and other open spaces**
  - Deck Foam system
- **Accommodation areas**
  - Water Mist Accommodation system



## OFFSHORE SERVICE VESSEL

- **Cargo tanks and pipes** - Nitrogen Membrane system | Nitrogen Cylinder system
- **Helideck** - Helideck Foam system
- **Deck areas** - Deck Foam system





## NFF WATER MIST SOLUTIONS

### TYPICAL SOLUTIONS

- ✓ LAFF only
- ✓ LAFF + TF
- ✓ LAFF + TF + ACC.
- ✓ Duct only
- ✓ Galley + Duct
- ✓ ACC. + Galley + Duct
- ✓ LAFF + TF + ACC. + Galley + Duct

**Definitions:**

LAFF = Local Application Fire Fighting system

TF = Total Flooding Fire Fighting system

ACC = Accommodation Fire Fighting system

Galley and Duct = Water Mist Deep-Fat Fryer Fire Fighting system

### USING UNIQUE XFLOW® TECHNOLOGY

Survitec proudly presents Novenco Fire Fighting (NFF) Water Mist solutions, supplied to the Maritime Market since 2000, covering all market segments. Now 4000+ systems are fitted onboard vessels worldwide.

The solution can be applied for machinery space total flooding (TF), local application (LAFF), accommodation areas (Acc.), galley and duct, giving you the opportunity to integrate them in a single system with a compact design.

**NFF Water Mist systems operate at a maximum 16 bar pressure (Galley system at 25 bar), and are tested and approved to the same standards and requirements as higher-pressure systems.**

The secret of the high efficiency is the variable size droplets from our unique designed XFlow® nozzle, not only absorbing the heat energy, but also suppressing the oxygen.

Lower 16 bar pressure in turn means low power requirements, less costs, simpler installation and maintenance. Our systems incorporate high quality components, such as Danish Grundfos pumps and Swedish Consilium control. Providing an innovative design offering several benefits while keeping you safe and compliant.

## LOCAL APPLICATION FIRE FIGHTING SYSTEM

### FEATURES

- ✓ The system can be supplied either as a stand-alone system or as part of the total flooding or accommodation system
- ✓ The local protection unit is supplied as plug and play, ready to connect to water, power, pumps, and pipes
- ✓ The system can be delivered as a diesel driven unit to comply with "safe ship" notifications
- ✓ Type approved heavy duty non-corrosive section valves
- ✓ Nozzle heads are protected in stand-by position
- ✓ Dry pipe system - uses very small amounts of water for immediate release, with a maximum system pressure of 16 bars
- ✓ Type approved and certified to be in compliance with IMO MSC.1/Circ. 1387

## TOTAL FLOODING FIRE FIGHTING SYSTEM

### FEATURES

- ✓ Reliable fire protection based on the latest technology
- ✓ The system can be released immediately without evacuation as it is harmless to machinery and crew
- ✓ Immediate release reduces the risk of damaging surrounding equipment
- ✓ The system uses a dry pipe system, with a maximum system pressure of 16 bar, with minimal water consumption and low power requirements
- ✓ Type approved and certified to SOLAS chapter II-2 and IMO MSC/Circ.1165



XFlow® nozzle for machinery space

## ACCOMMODATION FIRE FIGHTING SYSTEM

### FEATURES

- ✓ The water mist head is concealed in the ceiling and only visible when activated
- ✓ The nozzle has an elegant Danish design and comes in a variety of different materials & colours
- ✓ Standard components are based on a maximum system pressure of 16 bars
- ✓ Minimal installation costs and maintenance
- ✓ Type approved and certified in accordance with SOLAS chapter II-2 and Res. A.800(19) as amended by IMO Res.MSC.265(84)



XFlow® nozzle for accommodation areas

## WATER MIST DEEP-FAT FRYER FIRE FIGHTING SYSTEM

### FEATURES

- ✓ Pure water mist system, no chemicals are needed
- ✓ Easy clean nozzles, no protection cap etc. is needed
- ✓ Galley system is self-contained water driven from pressurised tanks
- ✓ Duct system can be supplied either as a stand-alone system or combined with other water mist system(s), such as with galley system and accommodation system, a typical combination
- ✓ Low pressure systems - The duct system is with a maximum system pressure of 16 bars, and the galley system is with 25 bar
- ✓ Easy service, no expensive refilling, only pure water and air-recharge
- ✓ The complement of galley and duct protection gives a more complete offering for yachts and passenger vessels
- ✓ Type approved to ISO 15371:2015



XFlow® nozzle for galley



XFlow® nozzle for duct



## FEATURES

- ✓ With a nozzle pressure of 4.0 bar, the throwing distance is 40 m and the monitor can protect up to 10 tiers of containers, and even more at higher pressure
- ✓ Easy to carry and can be quickly assembled and operated by one crew member
- ✓ Only one waterway connection for fast response time from alarm to operate
- ✓ Hydrant adaptors are available
- ✓ Dual purpose nozzle for spray and jet functionality
- ✓ Easy elevation feature to ensure precise and efficient fire fighting
- ✓ Developed with large bores to avoid clogging
- ✓ Low water requirement can save on extra installation costs linked to higher water supply demand
- ✓ No moving parts in the nozzle
- ✓ Ability of unattended operation

## NFF XFLOW<sup>®</sup> MOBILE WATER MONITOR

### FOR PROTECTION OF CONTAINER BAYS

Regulation states that vessels designed to carry five or more tiers of containers on or above the weather deck, shall carry a number of mobile water monitors. The Novenco Fire Fighting (NFF) XFlow<sup>®</sup> Mobile Water Monitor is tested and approved to meet the SOLAS regulations IMO MSC.1/ Circ. 1472.

The water monitor is easy to carry and assemble by an individual. After assembly, the monitor can be placed on deck or any other horizontal surface without any straps or fastening devices. However, it is still fitted with a strap that can be used if the ship is rolling or pitching in heavy seas. The monitor is connected to the fire mains with a standard fire hose, this starts operating as soon as the hydrant valve is opened. The angle of the water jet is easily adjusted by a turning wheel, from 0° to 90°, and the direction is set by turning the monitor. The monitor stays stable by itself and can operate as long as needed.





## NFF XFLOW<sup>®</sup> WATER MIST LANCE

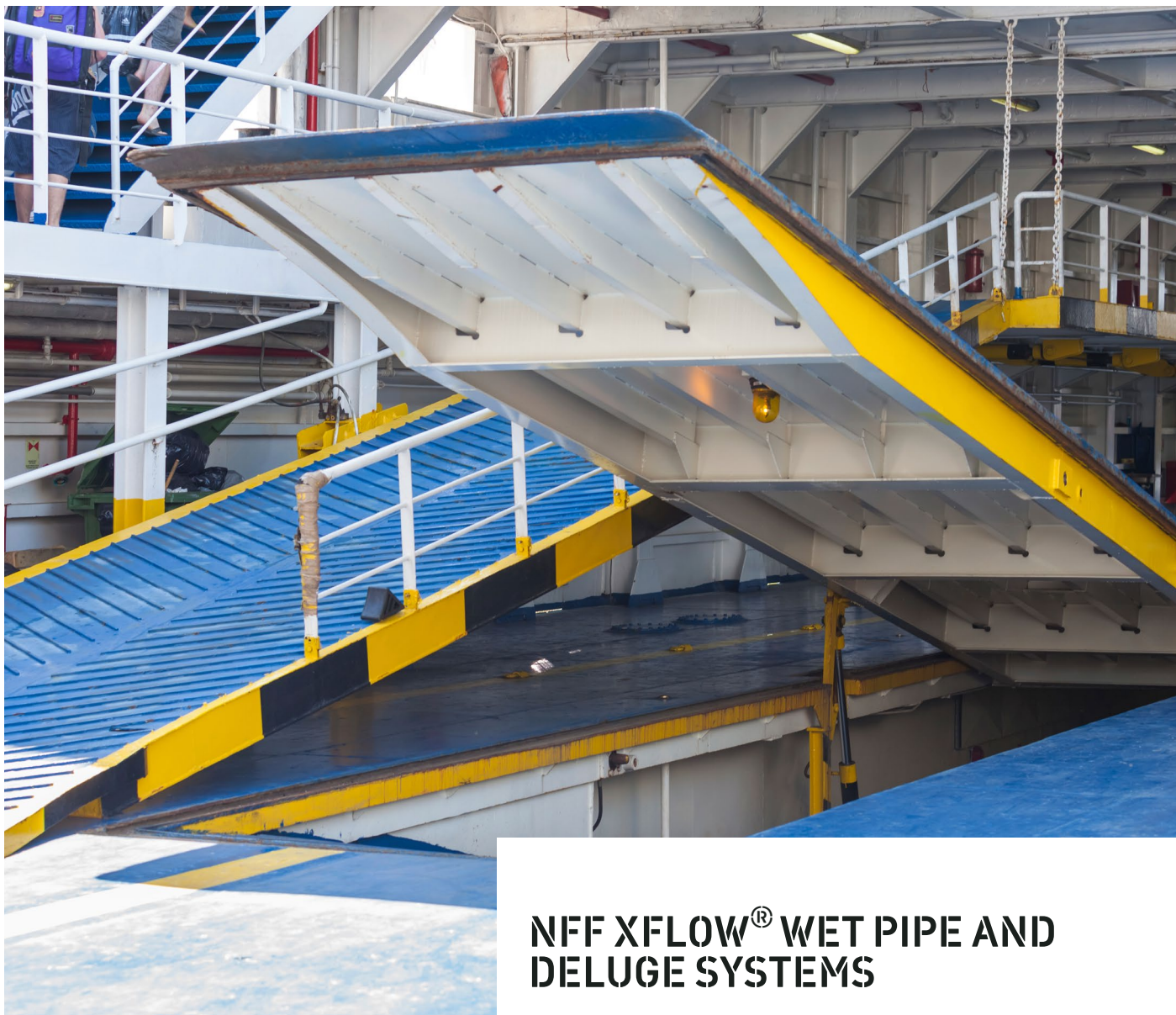
### FOR PROTECTION OF CONTAINER DECK AREA

Regulation states that vessels carrying containers on or above the weather deck, constructed on or after January 2016 shall carry at least one water mist lance. The Novenco Fire Fighting (NFF) XFlow<sup>®</sup> Water Mist Lance is type approved according to IMO regulations under SOLAS II-2/10.7.3.

The water mist lance tool case contains a battery operated drill, a fire hose and the lance itself. The equipment can easily be carried, mounted and operated by one person. The lance is connected to the fire main using the hose in the tool case, and water is released by pushing the valve handle. The drill is fast and easy to use, for maximum effect drill the hole high up. The lance is then inserted in the hole, and the groove in the fixing sleeve fastens to the container wall. The lance can then operate unattended for as long as needed.

### FEATURES

- ✓ The lance and its equipment come in a practical tool case for easy storage and use
- ✓ Equipped with a drill to penetrate the container wall quickly and safely
- ✓ Can be operated by one crew member
- ✓ Fitted with an extension to protect the operator from the hot surface
- ✓ The water spray is discharged both vertically to protect crew from the heat, and horizontally to suppress the fire
- ✓ Developed with a holder that enables it to be left unattended in operation



## NFF XFLOW® WET PIPE AND DELUGE SYSTEMS

### FOR PROTECTION OF RO-RO SPACES AND SPECIAL CATEGORY SPACES

The NFF XFlow® Wet Pipe system is designed to protect closed ro-ro and special category spaces against fires. The NFF XFlow® Deluge system is developed for protection of small open-ended ro-ro and special category spaces. Both systems have prescriptive based design and meet the latest IMO MSC.1/Circ.1430 regulation, providing improved fire protection for ro-ro and ro-pax vessels.

### BENEFITS

- ✓ Developed by our experienced and competent industry experts, and are extensively tested at the SP\* laboratory in Sweden.
- ✓ Easy to maintain, making them cost effective solutions throughout the life time of the vessel.
- ✓ Can be combined with NFF Water Mist systems protecting ro-ro, machinery and accommodation spaces with one system.
- ✓ Easy access to support and service, including consultancy, design, system delivery, commissioning and service, in one point of contact for design and installation support for your fire systems.

\*SP Technical Research Institute of Sweden, a leading international research institute

### FEATURES

- ✓ Low pressure components and piping - easy and cost saving installation
- ✓ Extensive documentation - better planning and design of the ro-ro space
- ✓ Standardised product range - short and predictable delivery time
- ✓ Large bore nozzles reduce the risk of clogging
- ✓ Seawater used during operation
- ✓ Fresh water connection for avoiding corrosion and cleaning up after testing
- ✓ Standard tool - and spare part kits are available for commissioning and service to ensure efficient operations
- ✓ A combinable option of total water mist solutions



## DEEP-FAT FRYER SYSTEM

### PROTECT YOUR GALLEY

The Survitec Deep Fat Fryer Fire Extinguishing system is a fixed fire-extinguishing system for galleys deep fat fryers onboard ships. The system is approved by major Classification Societies and European Council Directive 2014/90/EU on Marine Equipment (MED), has been tested according to ISO 15371:2015, and complies with SOLAS requirements.



### FEATURES

- ✓ Provides protection for up to three deep fat fryers
- ✓ Automatic operation with detection
- ✓ Can be serviced on board by crew
- ✓ No electrical power required for operation
- ✓ Easy, low cost installation with standard components
- ✓ All components for XFlow system in the galley hood supplied in stainless steel
- ✓ All tubing and fittings of low pressure type



## FEATURES

- ✓ Fast and effective solution with filling up to 1.8 m/min
- ✓ The system can be installed as a total flooding solution for the entire machinery space or for individual compartments
- ✓ Quick activation of the system minimises fire and heat damage to equipment and structures
- ✓ The foam is not harmful to the crew
- ✓ It has a cooling effect which helps prevent re-ignition of the fire
- ✓ No hazardous decomposition products is formed that could cause damage
- ✓ Expansion ratio up to 1:666 at nominal pressure of 6 bar using inside air
- ✓ Type approved and certified to be in compliance with IMO MSC.1/Circ.1384

## HIGH EXPANSION FOAM SYSTEM

### A SAFE AND COST EFFICIENT ALTERNATIVE

If a fire breaks out in an enclosed area on a vessel, we depend on an extinguishing system that deploys quickly, is effective and safe for personnel. The Survitec High Expansion Foam fire extinguishing system (Survitec HiFoam system) using inside air is an extremely effective protection system for machinery space of Category A applications. Further, the system is cost effective and safe for the crew.

### BENEFITS

- ✓ A cost effective solution designed for optimal system performance, keeping both installation and operational costs low.
- ✓ The use of inside air eliminates the need for an external air ducting and fans.
- ✓ Requires minimal maintenance.
- ✓ Easy to install and operate.
- ✓ The space saving installation provides a zoning option for selective and sequential release.
- ✓ A very rapid filling rate with low consumption of water and foam concentration. This optimises protection of equipment and reduces water capacity needs.
- ✓ Replacement of the foam concentrate is available worldwide.



## DECK FOAM SYSTEM

### EFFECTIVE PROTECTION OF OPEN SPACE AREAS

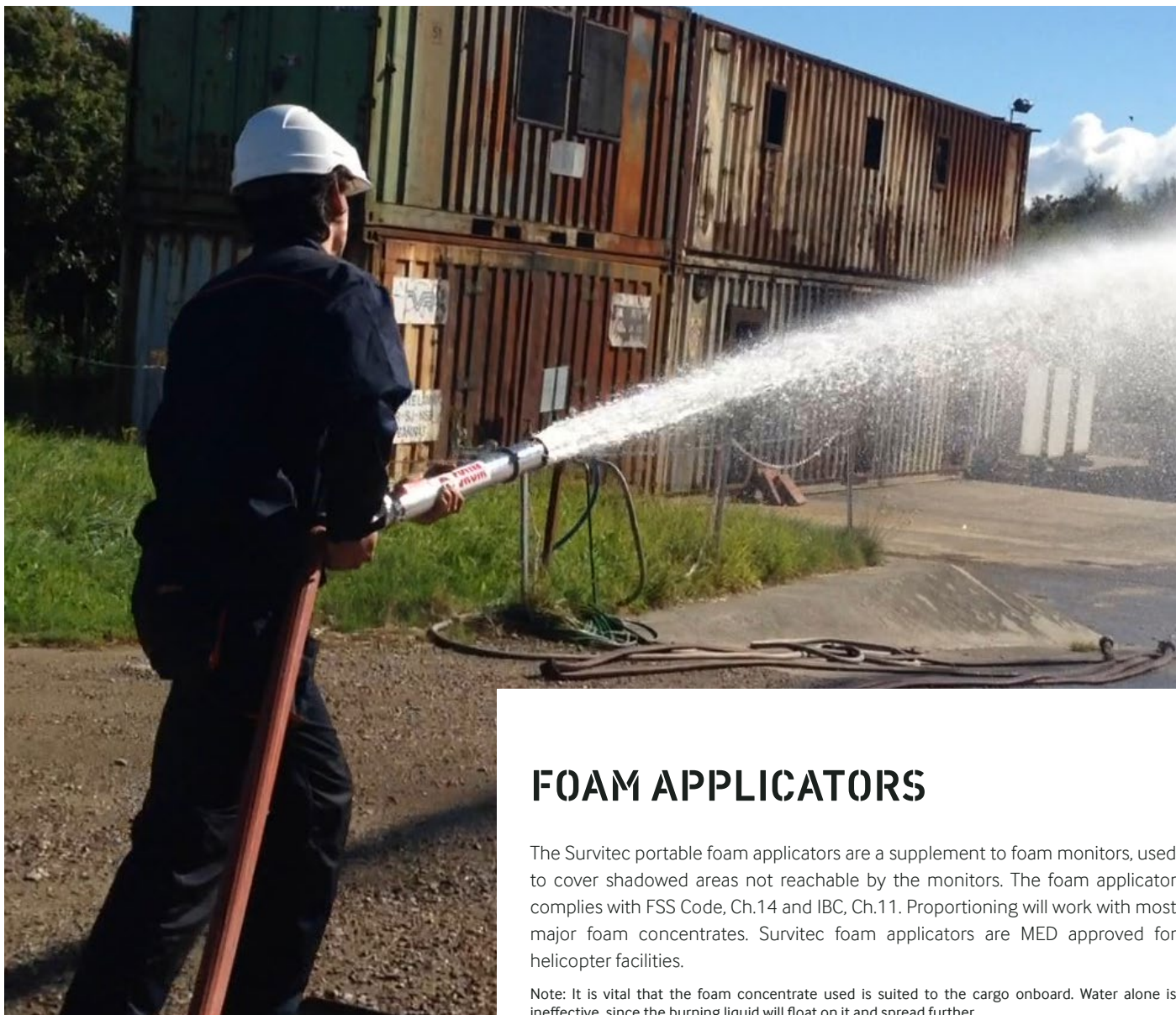
Survitec Deck Foam Fire Extinguishing system is a fixed, low expansion foam system that uses foam concentrate, water and air to effectively extinguish fires in open areas such as cargo tank deck area and helidecks. The system provides safe and effective protection which is harmless to people.

### BENEFITS

- ✓ A high quality fire extinguishing system which is easy to operate.
- ✓ Modular skid units provide easy installation and reduced footprint.
- ✓ Corrosion resistant components and coatings provide a robust, low maintenance system.
- ✓ To prevent foam contamination, a polyester tanker reinforced with glass fibres is used.
- ✓ The system can use both fresh or sea water.
- ✓ For service purposes, foam concentrate is available worldwide as well as foam testing, servicing and system upgrades.
- ✓ Designed for optimal system performance, keeping both installation and operational costs low.
- ✓ System is designed according to FSS Code, Ch. 14 and IBC, Ch 11

### FEATURES

- ✓ The low expansion foam quickly blankets the fire and prevents further outbreak
- ✓ A balanced pressure proportioner guarantees reliable foam mixing from 1-3 % ratio
- ✓ Foam Monitors and portable applicators can be used individually or in conjunction
- ✓ Fixed foam monitors are used to fight fire from a predetermined safe distance, while portable applicators and nozzles cover shadow areas not reachable by the monitors
- ✓ Sturdy and compact foam monitors are adjustable and can be used in two modes: jet or fog
- ✓ System comes in two operating options: manual or remotely controlled with hydraulics
- ✓ System is designed and suitable for winterization class down to -50 °C



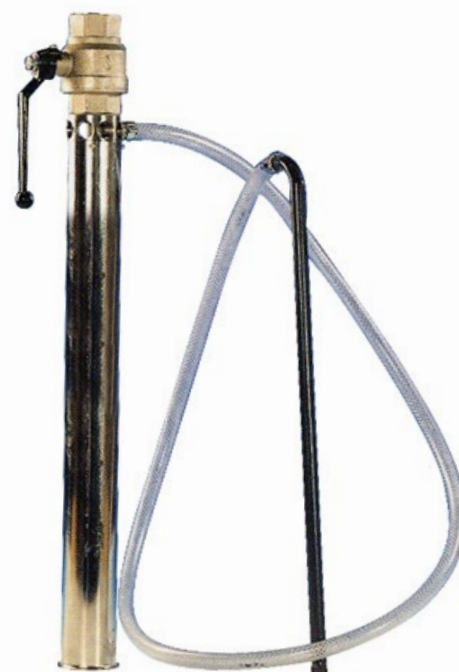
## FOAM APPLICATORS

The Survitec portable foam applicators are a supplement to foam monitors, used to cover shadowed areas not reachable by the monitors. The foam applicator complies with FSS Code, Ch.14 and IBC, Ch.11. Proportioning will work with most major foam concentrates. Survitec foam applicators are MED approved for helicopter facilities.

Note: It is vital that the foam concentrate used is suited to the cargo onboard. Water alone is ineffective, since the burning liquid will float on it and spread further.

## FEATURES

- ✓ Stainless steel and long-lasting life
- ✓ Light weight, easy to carry and operate
- ✓ 3% Induction capacity
- ✓ Large coverage area
- ✓ Self-suction hose, no need for additional proportioner
- ✓ Rapid connection to fire mains
- ✓ Can be used even with a low-pressure water supply
- ✓ 3 and 5 bar options





## FOAM CONCENTRATES

Survitec Deck Foam system uses either fluoroprotein or synthetic foam concentrates. Depending on application, it can be alcohol resistant for polar solvent fires or regular ones for hydrocarbon fires. Foam concentrates offered are MED, IMO MSC.1/Circ.1312 approved. Some foam concentrates are HOCNF and ICAO approved. Based on extreme applications, foam concentrates can be freeze protected down to -45 °C.

| Product Name                               | Applications                      | Protection                              | Expansion | Foam Type                               | Concentration     | Approvals         |
|--|-----------------------------------|---|-----------|---|-------------------|-------------------|
| APIROL* FX3                                | Monitors and portable applicators | Oil tankers                             | Low       | FluoroProtein (FP)                      | HC: 3 %,          | MED/UL            |
| UNIVEX 3-3M                                | Monitors and portable applicators | Oil and Chemical tankers, and Helideck  | Low       | FluoroProtein (FP)<br>Alcohol resistant | HC: 3 %, Alc: 3 % | MED/ICAO          |
| AFFF 1 % F-25 PD4142                       | Monitors and portable applicators | Oil tankers and Helidecks               | Low       | AFFF (synthetic)                        | HC: 1 %,          | MED/DNV/ICAO      |
| AFFF 1 % F                                 | Monitors and portable applicators | Oil tankers and Helidecks               | Low       | AFFF (synthetic)                        | HC: 1 %,          | MED/LR/HOCNF/ICAO |
| AFFF 3 % Ultra LT                          | Monitors and portable applicators | Oil tankers and Helidecks               | Low       | AFFF (synthetic)                        | HC: 3 %,          | MED/ICAO          |
| AFFF 3 % F-25 PD4344                       | Monitors and portable applicators | Oil tankers and Helidecks               | Low       | AFFF (synthetic)                        | HC: 3 %,          | MED/ICAO          |
| ARC 3 x 3                                  | Monitors and portable applicators | Oil and Chemical tankers, and Helidecks | Low       | AFFF (synthetic)<br>Alcohol resistant   | HC: 3 %, Alc: 3 % | MED/ICAO          |
| IAF PD9272 High expansion foam concentrate | HiFoam systems                    | Multi vessel use, machinery spaces      | High      | Synthetic                               | 2 %               | MED/CCS           |

Older foam types may be available on request

HC = Hydrocarbons

Alc = Alcohols (Polar solvents)

\*: Previous Unirol



## FEATURES

- ✓ Proven time release and capacity capabilities
- ✓ A wide range of pressure vessels for powder
- ✓ Can be deployed by hand held hoses, fixed monitors, or a combination of both
- ✓ Tested in minus 28 °C
- ✓ Up to 190 metres pipe and 33 metres hose for handheld pistol
- ✓ Up to 140 metres pipe for the monitor
- ✓ Provides complete coverage to all the areas that need protection
- ✓ Powder penetrates into the smallest and even partially covered locations
- ✓ Can be installed as a central, modular or hybrid system
- ✓ Type approved and MED certified to be in compliance with IMO MSC.1/Circ.1315

## DRY CHEMICAL POWDER SYSTEM

### EFFECTIVE SOLUTIONS FOR GAS CARRIERS

The Survitec Dry Chemical Powder Fire Extinguishing System (Survitec DCP System) breaks down the chemical reaction described in the fire triangle and extinguishes the fire. The system is effective and non-toxic which is harmless to people and the environment. The system is extensively and independently tested, ensuring regulatory compliance. It can be applied on merchant marine and offshore structures as the design is in accordance with IGC code and IMO MSC.1/Circ.1315.

### BENEFITS

- ✓ A flexible and high quality fire extinguishing system
- ✓ Easy to install. Components can be delivered on skid units for reduced installation time and cost.
- ✓ The system has flexible piping options. Central system provides flexibility in powder capacity and distribution. Modular units result in reduced pipe routes and long pipe runs. Hybrid is a combination of central and modular.
- ✓ Easy to operate and requires minimal maintenance
- ✓ Designed to keep material and installation costs low
- ✓ Standardised system components minimise maintenance and operational costs





## HIGH PRESSURE CO<sub>2</sub> SYSTEM

### COST EFFECTIVE SOLUTION FOR ENCLOSED SPACES

Extinguishing fires in enclosed spaces requires solutions that can be deployed quickly and effectively with minimal risk to the environment and equipment. The Survitec High Pressure CO<sub>2</sub> Fire Extinguishing System (Survitec CO<sub>2</sub> System) is a total flooding system for enclosed spaces. The system, proven to be fast and effective, has been supplied to numerous vessels worldwide.

### BENEFITS

- ✓ A cost effective solution for optimal system performance, keeping both installation and operational costs low.
- ✓ The system is available on rack modules to save on installation time and costs.
- ✓ Extinguish fire effectively and reduce secondary damages.
- ✓ Minimal and easy maintenance keeps operational costs low.

### FEATURES

- ✓ Options of manual or pressure operated cylinder top valves to quickly discharge the CO<sub>2</sub> gas
- ✓ Pressure operated with self contained power source in release cabinets with CO<sub>2</sub> pilot Cylinders, no need for an external power source. Optional, electrical release is available
- ✓ The system is equipped with alarm devices which will pre-warn the crew to evacuate the protected space
- ✓ A safe release delay function ensures the safety of the crew
- ✓ Sequential release design ensures a safe and effective operation according to class rules



## 1230 CLEAN AGENT SYSTEM

### A CLEAN ALTERNATIVE

Traditionally, fire extinguishing systems for the offshore and maritime industry have contained components harmful to the environment and personnel, such as Halon and CO<sub>2</sub>. The Survitec 1230 Clean Agent Fire Extinguishing system is a high quality, compliant fire extinguishing system using a clean agent. The system is both environmentally friendly and harmless to people. The solution is designed for extinguish fires in enclosed spaces and particularly suited for rooms with sensitive equipment and vessels where space is limited.

### BENEFITS

- ✓ A high quality & compliant clean agent fire extinguishing system using Novec1230 fluid
- ✓ A true Halon replacement alternative with the possibility of utilising existing pipe installations.
- ✓ Designed for optimal system performance.
- ✓ Large nozzle coverage, with a unique nozzle discharge pattern.
- ✓ Small pipe dimensions
- ✓ Saving installation space and weight
- ✓ Easy installation and low installation cost
- ✓ The extinguishing fluid used has no measurable environmental impact.
- ✓ For service purposes, replacement fluid is available worldwide.

### FEATURES

- ✓ Large nozzle coverage designed specifically for the offshore and marine industry, with a unique nozzle discharge pattern
- ✓ In many cases, existing piping arrangements can be utilised for Halon retrofits
- ✓ No environmental impact
- ✓ Type approved and MED certified to be in compliance with IMO MSC/Circ.848 & 1267



## INERGEN® CLEAN AGENT SYSTEM

### SAFE FOR CREW, EQUIPMENT AND ENVIRONMENT

The Inergen® system is a fire extinguishing system for enclosed spaces. Inergen is a clean agent consisting of atmospheric gases, which provides a safe solution for the crew, equipment and environment. Inergen is the only fire extinguishing system that is frequently demonstrated with an audience inside the protected room.

### BENEFITS

- ✓ Safe for the crew, equipment and environment in occupied spaces
- ✓ Can be released immediately when a fire is detected, avoiding unnecessary fire damage
- ✓ Easy to install and operate
- ✓ Does not create invisibility during discharge
- ✓ Type approved and MED certified to be in compliance with IMO MSC/ Circ.848 & 1267

### FEATURES

- ✓ Inergen is the only fire extinguishing system that is frequently demonstrated with an audience inside the protected room
- ✓ It contains 8 % CO<sub>2</sub>. This means that the body can absorb as much oxygen as it would in a normal atmosphere
- ✓ It is stored in cylinders as compressed gas
- ✓ Inergen does not decompose or react with other components in the fire. This eliminates corrosion or residual harmful agents in the protected space
- ✓ Inergen has no Ozone Depletion Potential (ODP) and no Global Warming Potential (GWP)

# PORTABLE FIRE EXTINGUISHERS



| Extinguishing Medium | Capacity | Operation principle | Fire Class                   | Recommendation   | Typical applications   |
|----------------------|----------|---------------------|------------------------------|--|--|
| Water                | 9 L      | Cartridge operated  | Class A                      | A - wood, paper, textiles and similar materials  | Accommodation areas  |
| Foam                 | 9 L      | Cartridge operated  | Class A and B                | F - cooking grease, fats or oil fires  | Engine room, paint store and helideck etc.   |
|                      |          |                     | Class A, B and polar solvent | AB - wood, paper, textiles, flammable liquids, electrical equipment  |  |
| Powder               | 2 kg     | Cartridge operated  | Class A and F                | AB + Solvents - efficient on e.g. alcohol fires, electrical equipment  | Accommodation areas, engine room, pump room, paint store, helideck, gas filling stations etc.              |
|                      |          |                     | Class A and B                |  |  |
|                      |          |                     | Class A, B and C             |  |  |
|                      |          |                     | Class A and D                |  |  |
| Powder               | 6 kg     | Stored pressure     | Class A, B and C             | ABC - wood, paper, textiles, flammable liquids, electrical equipment and flammable gases<br>D - combustible metals | Accommodation areas, engine room, pump room, paint store, helideck, gas filling stations etc.              |
|                      | 9 kg     | Cartridge operated  | Class A, B and C             |  |  |
|                      | 12 kg    | Cartridge operated  | Class A and D                |  |  |
|                      |          | Stored pressure     | Class A, B and C             |  |  |
| CO <sub>2</sub>      | 5 kg     | Stored pressure     | Class B                      | B - flammable liquids and electrical equipment   | Good solution for electric equipment, engine room, pump room, cargo room (car carriers), galley and bridge |



# WHEELED FIRE EXTINGUISHERS

| Extinguishing Medium | Capacity | Operation principle | Fire Class       | Recommendation   | Typical applications  |
|----------------------|----------|---------------------|------------------|--|---|
| Foam                 | 45 L     | Cartridge operated  | Class A and B    | AB - Wood, paper, textiles, flammable liquids  | Engine room, boiler room, paint store and helideck etc.   |
|                      | 135 L    |                     |                  |  |   |
| Powder               | 25 kg    | Stored pressure     | Class A, B and C | ABC - Wood, paper, textiles, flammable liquids, electrical equipment and flammable gases | Accommodation areas, engine room, pump room, paint store, helideck etc.                                     |
|                      | 50 kg    | Cartridge operated  | Class A, B and C |  |   |
| CO <sub>2</sub>      | 9 kg     | Stored pressure     | Class B          | B - Flammable Liquids and electrical equipment   | Good solution for electric equipments, engine room, pump room, cargo room (car carriers), galley and bridge |
|                      | 20 kg    |                     |                  |  |   |

# EXTINGUISHER ACCESSORIES

| Type               | ACCESSORIES   |
|--------------------|---|
| Basic              | <ul style="list-style-type: none"> <li>• Fire Extinguisher Bracket with Straps*</li> <li>• Re-arming accessories</li> <li>• Cabinets for Fire Extinguishers*</li> </ul> |
| Gas Cartridge type | <ul style="list-style-type: none"> <li>• CO<sub>2</sub> Cartridge*</li> </ul>   |
| Foam type          | <ul style="list-style-type: none"> <li>• Foam and premix charges*</li> </ul>  |
| Powder type        | <ul style="list-style-type: none"> <li>• Powder refill*</li> </ul>  |

\*: choose matched type for related capacity extinguisher



**Survitec offer wide range of marine approved Fire Extinguishers**



## CABINETS FOR FIRE EQUIPMENT

Survitec offer a wide range of cabinets for fire extinguishers, fire hoses, hydrant equipment, helideck fire hoses, lifejacket, fire fighter outfit and equipment. They are built to endure the rigours of the marine environment. Well proven through many years of supply in numerous markets from offshore and cruise to general marine. Our cabinet range offers flexible options, giving you a choice depending on your stowage requirements. Our manufacturing processes and high-quality materials give a longer life. Options include floor or wall mounted versions enabling you to maximise your space. User protection and comfort is considered at every part of the design process to ensure the highest quality.



## FIRE HOSES

Survitec supplies a range of tested and approved Fire Hoses for more than 30 years. The options available includes Guardman and Mertex. The hoses can be supplied in various lengths separately, or with a range of couplings, adaptors and nozzles to suit your vessel's requirements. In addition we also supply fire hose storage options. MED approved Mertex hose is a simple hose that can be used in extreme cold climates, providing functional benefits without the complexity. A more advanced iteration is the Guardman which is constructed to tolerate almost all known usage conditions. Moreover, for purposes beyond fire fighting, for example transportation of liquids in the shipping industry and offshore industry. Additionally, Survitec can also supply hoses for the transfer of drinking water.



## FIRE COUPLINGS

Survitec can supply a range of fire hose fittings. The range includes gunmetal, light alloy and brass hose couplings, adaptors, bland caps and washers. These come in both British and International versions, included are standard slangs and international ship-to-shore flange adaptors. The options available include Instantaneous, Storz, NOR (Norlas), Nakjima (JIS).

These items can be supplied fitted to the fire hose or separately as required.



## FIRE NOZZLES

A range of fire nozzle options are available to suit your operational needs these include:

- Attack Flow Nozzles - variety of options
- Jet/Spray Nozzles - variety of options
- Fog Lance Nozzles - For use in 'hard to reach' places such as ships' holds
- Fog Spike Lance Kits - For container fire fighting on board



## HOSE ACCESSORIES

Survitec also provides a range of accessories around fire hoses installation, connection and storage. The range includes

- Fire Hydrants
- Portable Binding Machine & Blinding Bracket for couplings
- Blind caps, T pieces, Gasket and Coupling spanners for couplings



## FIRE BLANKETS

We offer a range of BSEN-approved Fire Blankets.

Manufacturer recommends replacement after five years.

Certification

- BSI certified to BS EN1869: 1997
- Kitemark Licence No KM 25047
- LPCB Tested
- BAFF Approved



## FIRE BUCKETS & ACCESSORIES

Survitec offers you a variety of Fire Buckets and accessories including Metal Fire Bucket, Plastic Fire Bucket, Metal Lid, Plastic Lid, Wall Mounting Bracket and Sand for Bucket Bag etc.



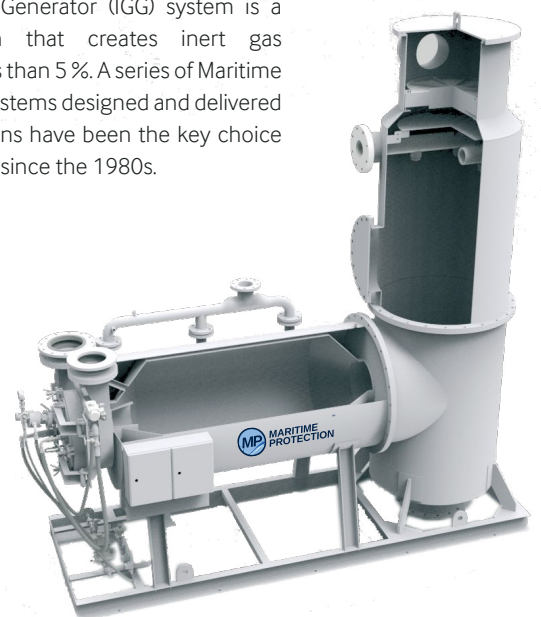
## MP INERT GAS GENERATOR SYSTEM

### FEATURES

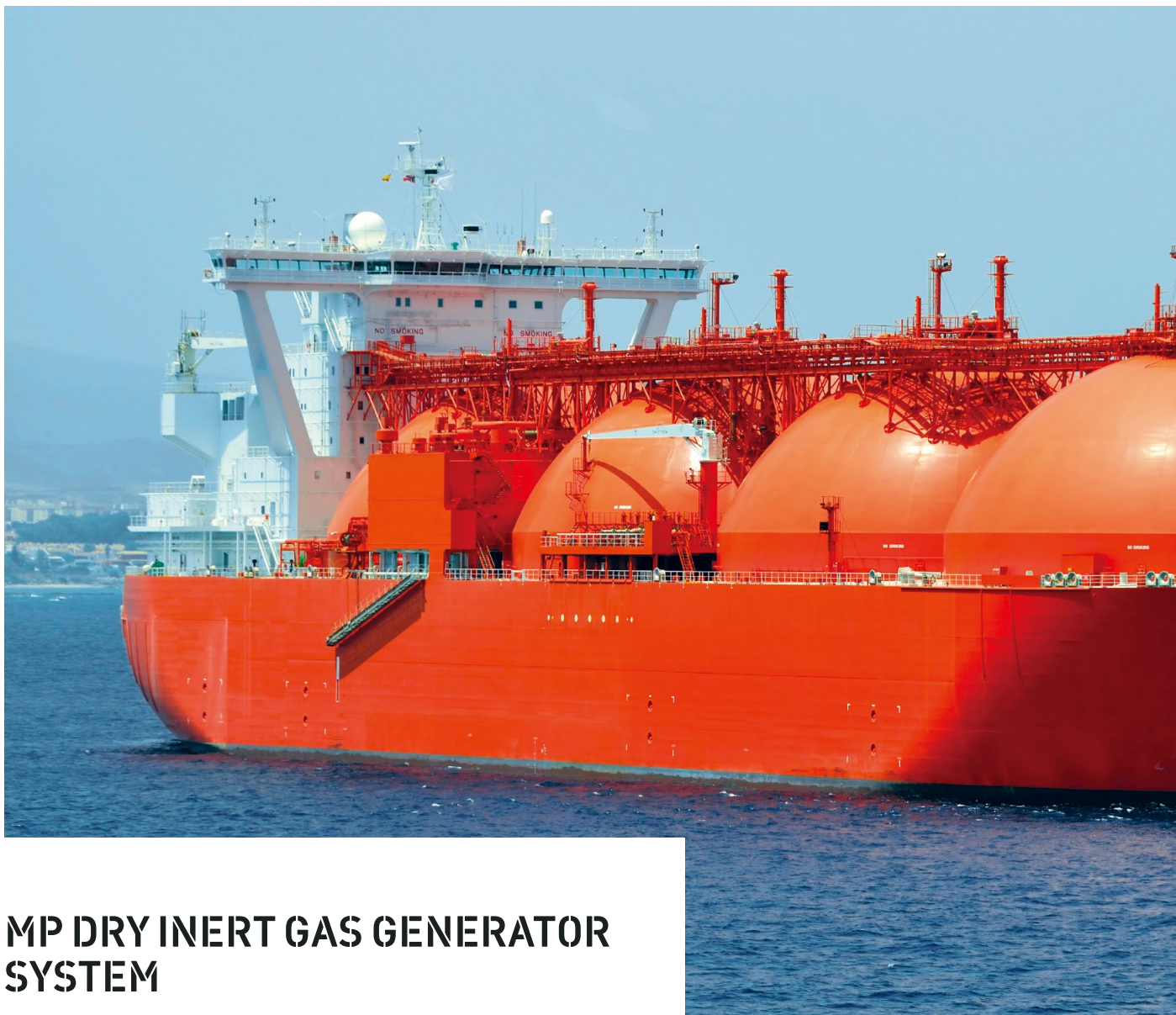
- ✓ Flexible solutions from loose equipment to turn-key deck house modules
- ✓ Easy installation - data communication between operator panels
- ✓ High grade Corrosion resistant steel used for the combustable chamber and cooling jacket
- ✓ Easy access to burner & combustion chamber for inspection and service
- ✓ Fully automatic operation with PLC control
- ✓ Modern operator screen with state of the art operator feedback
- ✓ Automatic turn down ensures best possible fuel economy

### GENERATE COMBUSTION INERT GAS

Vessels carrying cargo producing hydrocarbon vapour require an inerting solution to eliminate the risk of explosions and fires in the cargo tanks. This can be achieved by keeping the oxygen content below 8 %, a standard set by IMO. The Maritime Protection Inert Gas Generator (IGG) system is a combustion solution that creates inert gas containing oxygen less than 5 %. A series of Maritime Protection Inert Gas systems designed and delivered for different applications have been the key choice for the marine market since the 1980s.







## MP DRY INERT GAS GENERATOR SYSTEM

### UP TO 50% REDUCTION IN WEIGHT AND FOOT-PRINT COMPARED TO CONVENTIONAL SYSTEMS

The Maritime Protection Dry Inert Gas Generator system (DIGG) for liquefied gas carriers is a combination of two systems. A traditional inert gas generator system based on combustion and a two-stage dehumidification system include a cooling and adsorption process. The two-bed adsorption dryer has been replaced with a compact rotating adsorption dryer. This innovative system is proven by the market for 15 years.



The dryer and cooler unit

### FEATURES

- ✓ Easy installation and maintenance
- ✓ 100 % automatic control, no manual adjustments required by operator
- ✓ Dryer rotor will retain more than 90 % capacity after 10 years of continuous operation
- ✓ Stable dew point during operation, below -45 °C reached 20 - 40 minutes after start
- ✓ High grade corrosion resistant steel used for the combustion chamber
- ✓ Mechanically simple and reliable centrifugal blowers
- ✓ Low pressure drop in system
- ✓ MODBUS, TCP/IP communication with IAS
- ✓ Modular design, dryer, cooler and heater can be separated



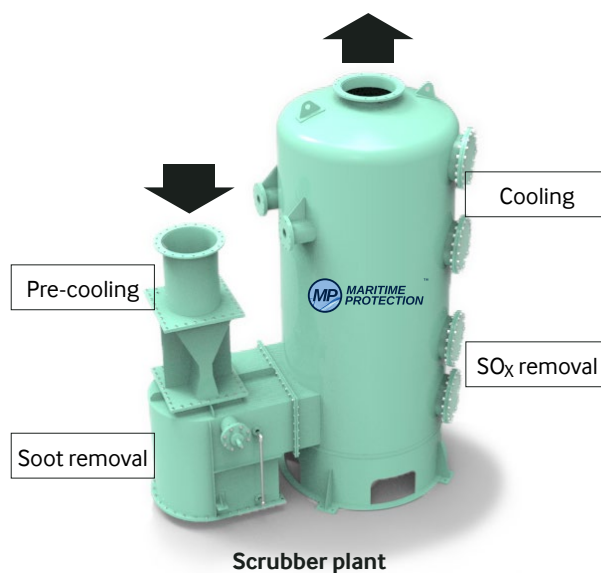
## MP FLUE GAS SYSTEM

### FEATURES

- ✓ Flue gas from ship's boilers are used to produce clean and soot free inert gas
- ✓ Efficient cooling by pre-cooler and scrubber tower
- ✓ High pressure centrifugal blowers positioned downstream from the flue gas scrubber provide inert gas to cargo tanks
- ✓ System capacity is automatically controlled by deck pressure set-point in software
- ✓ Deck Water Seal ensures safe sealing of inert gas and prevents back flow of cargo gases to safe area
- ✓ A Pressure Vacuum Breaker Protects the cargo tanks from dangerous pressure conditions

### YOUR ECONOMIC AND ADEQUATE CHOICE

The most economic and adequate way to produce inert gas on board is to make use of the flue gas from the ship's boilers. The Maritime Protection Flue Gas system cools and cleans the flue gas and then distributes it to the cargo tanks, typically during a cargo discharge.





## MP NITROGEN MEMBRANE SYSTEM

### WHEN RELIABILITY AND SIZE MATTERS

Survitec is proud to present the re-engineered Maritime Protection Nitrogen System, first introduced in 1984. The complete new design has fully automated operation, new membranes, easy-to-exchange filters and more easy access for maintenance. Nitrogen systems are needed for ships to stay compliant with regulations and to protect transportation of flammable and sensitive cargo. As an inert gas medium, nitrogen is the purest, and thereby the preferred solution for applications where cargo contamination could be an issue.

### BENEFITS

- ✓ Long lasting and reliable system
- ✓ Flexible system placement and space saving installation
- ✓ Predictable delivery time and time saving installation
- ✓ Easy maintenance
- ✓ Low maintenance cost

### FEATURES

- ✓ One of the smallest footprints in the market. Only requires service access and pipe installation from two sides.
- ✓ Purity range 95 % to 99.9 %
- ✓ Standard capacity range up to 5300 Nm<sup>3</sup>/h
- ✓ Standard product range for different vessels and applications
- ✓ Up to 55 °C high temperature resistant and long lasting membranes for maritime environments
- ✓ Special start-up functionality protecting the membranes from contamination, flush piping and vent until optimal process parameters are obtained
- ✓ Rapid system start-up enables the system to reach purity and dew point quickly
- ✓ User-friendly, fully automated control and monitoring system. Actual Nitrogen flow visible on panel view and IAS



## MP NITROGEN CYLINDER CENTRAL SYSTEM

### FEATURES

- ✓ Purity range 95 - 99.996 % vol. N<sub>2</sub>
- ✓ Engineering and class approvals on request
- ✓ Clean and dry nitrogen for inerting, padding, purging and cargo change operations. Suitable for a wide range of cargo types
- ✓ Easy to install, operate and maintain
- ✓ Can be installed in safe or hazardous area
- ✓ No electrical power required
- ✓ Minimum space requirements
- ✓ Low maintenance

### AN EFFECTIVE NITROGEN TOPPING UP SOLUTION

Effective Nitrogen topping up solution can prevent the cargo contamination, fire and explosion in the cargo spaces. The MP Nitrogen Cylinder Central system compensates the loss of nitrogen during voyage and ensures a safe positive pressure in the ullage space at all times. The system has sufficient capacity for purging operations when required. It can be an ideal upgrade solution for ships that already have a high capacity combustible inert gas generator, allowing a small padding option with dry & high purity nitrogen.

### BENEFITS

- ✓ Safe operation when transporting dangerous cargo
- ✓ Safe and clean preservation of valuable cargo
- ✓ No moving parts
- ✓ Our service organisation assists in key areas around the world
- ✓ Higher flexibility for cargo/charter contracts for the vessel



## MP NITROGEN MEMBRANE CONTROLLED AND MODIFIED ATMOSPHERE SYSTEM

### SAFE TRANSPORTATION OF PERISHABLE PRODUCE

In addition to refrigeration, transportation of perishable produce like fruit requires a low oxygen atmosphere to avoid damaging the cargo and preserve its high quality during transport. Survitec offers two solutions: Maritime Protection Modified Atmosphere (MA) system and Controlled Atmosphere (CA) system.

In the MA system, nitrogen flows into the containers at a constant rate while the CA system automatically maintain a balance between O<sub>2</sub> and CO<sub>2</sub> content in the cargo holds.

Fruit trade reefers use controlled atmosphere systems. By automatically injecting either nitrogen or air, the system compensates for leakage or loss of oxygen caused by the respiration of the fruit. Our controlled atmosphere systems are as fixed installed systems or standardised ISO container units complete with compressors.

Depending on how cargo is stored during transportation, we can offer appropriate solutions to preserve valuable cargo. For reefer ships carrying fruits in the refrigerated containers, the MA systems are provided. For reefer ships carrying fruits on the pallets in cargo holds, the CA systems are available.

### FEATURES

- ✓ Containerised or fixed solution
- ✓ Custom design based on standardised components
- ✓ Easy to install
- ✓ Sophisticated filtering system
- ✓ Unique feed air dehydration solution
- ✓ Long life of the membrane modules
- ✓ Applying most advanced fibre technology
- ✓ PLC control of Nitrogen generator parameters
- ✓ Advanced automatic atmosphere control system
- ✓ Easy operation
- ✓ Minimum maintenance



## MP DUAL FUEL INERT GAS GENERATOR SYSTEM

### DIESEL OIL AND GAS

The Maritime Protection Dual fuel inert gas generator system is designed for dual fuel operation, i.e. marine diesel oil and natural gas. The dual fuel gas system is designed in accordance with Class' regulations.

## MP FLEX-INERT GAS GENERATOR SYSTEM

### INERT GAS GENERATOR WITH REDUCED FUEL CONSUMPTION

This system uses a mixture of air and exhaust gas to produce inert gas with reduced fuel consumption. This solution is rarely used anymore and is replaced by MP Flue-Generator system.

## MP FLUE-GENERATOR SYSTEM

### FEED COMBUSTION INERT GAS OR FLUE GAS

The system is based on the Flex-Inert Gas Generator with the inclusion of additional valves and computer programming. The system can be operated in two modes:

- Generator mode
- Flue gas mode with suction of flue gas from boilers through flex venturi and scrubbing in generator.



## INERT GAS DECK-HOUSE MODULES

DESIGNED FOR ALL FLUE GAS, INERT GAS GENERATOR AND NITROGEN SYSTEMS

Inert gas systems can also be delivered as a turn-key Deck-House module, applied on tankers, FPSO's, oil barges etc. All systems and capacities are available.



## SAMPLE EXTRACTION SMOKE DETECTION SYSTEM

### FEATURES

- ✓ Automatic air sampling and monitoring of up to 48 cargo holds simultaneously
- ✓ Utilises existing CO<sub>2</sub> pipework
- ✓ Completely automated and self-adjusting
- ✓ Explosion protected to IEC79 and EN 50 020
- ✓ Fans switch automatically every 24 hours to give an even load on electrical motors
- ✓ Repeater panels allow for monitoring from key locations onboard
- ✓ One button control for simple testing and resetting
- ✓ Cost efficient, compact and modular design

The sample extraction smoke detection system provides early detection of fires in cargo holds through continuous smoke monitoring in up to 48 cargo holds simultaneously. Air samples are drawn from the cargo holds via already existing piping, then automatically monitored for any smoke contamination. To minimise installation costs the smoke detection system normally uses the same pipe work as the CO<sub>2</sub> fire extinguishing system.







## FIRE DETECTION AND FIRE ALARM SYSTEM

### RELIABLE WARNING

Based on standard components, Survitec Fire Detection and Fire Alarm systems are customised for your specific project and delivered with comprehensive design documentation.

### BENEFITS

- ✓ Safe for the crew, equipment and environment
- ✓ Can be released immediately when a fire is detected, avoiding unnecessary damage caused by the fire
- ✓ Safe for use in occupied spaces
- ✓ Easy to install and operate



### FEATURES

- ✓ The system is approved by the major classification societies
- ✓ The detectors have a subtle design and are easy to install and set up with common detector base regardless of detector type
- ✓ Comprehensive fault diagnostics and detector condition monitoring allow rapid location of faults and minimise downtime



## PORTABLE GAS DETECTION

### GAS DETECTION SOLUTIONS

A gas detection unit of any kind is a vital piece of equipment for crew members entering any enclosed space or tank. The SOLAS XI-1/7 regulation approved by MSC 93/94, requires all ships engaged in international voyages to have a minimum of one portable 4-gas detection unit on-board.

**THE GAS PRO DETECTION UNIT** is the ideal solution for working in confined spaces around the vessel. Offering detection of 4 gases in a compact and rugged solution, Gas Pro has a built in pump & easy to read top mount display combining ease of use with user focused features.

**THE T4 GAS DETECTION UNIT** offers you compliance, robustness and low cost of ownership in a simple to use solution. A large single button and intuitive menu system allows the user to operate the unit even when wearing gloves.

**THE GAS-PRO TK IS A GAS DETECTION UNIT** especially designed for tankers. It is made for use in inert environments where standard gas detectors just won't work. Gas-Pro TK overcomes this due to its dual infra-red sensors. One common hydrocarbon detection method uses pellistor sensors. However, these sensors require the presence of oxygen to work, and if hydrocarbon levels get too high it can compromise the sensors' effectiveness. Gas-Pro TK meets these unique challenges with its dual infra-red sensors and ability to check tanks both full of hydrocarbon and fully purged with inert gas.



The Gas-Pro Gas Detector



The Gas-Pro TK Gas Detector



The T4 Gas Detector

“  
A VITAL PIECE OF EQUIPMENT FOR CREW MEMBERS  
ENTERING ANY ENCLOSED SPACE OR TANK.”



## SPIROSCAPE EEBD

**THERE CANNOT BE AN SIMPLER UNIT THAN THE SPIROSCAPE.**

Once it is donned, the user is able to focus on escape. This is made possible with the unique ambient air valve which automatically opens when the cylinder is depleted. Eliminating any risk of suffocation inside the hood as no air is wasted when a low air warning alarm initiates. The patented air distribution system expels CO<sub>2</sub> from the hood optimising the use of air from the cylinder.

The air flow is activated by pulling the quick start tab. This simultaneously opens the zipper on the carrying bag, giving the user access to the hood. An anti-tamper tag verifies the integrity of the unit and the cylinder contents gauge can easily be read from the outside. The hood has a very flexible neck seal providing an effective seal, making the hood easy to don and comfortable to wear.

**OCENCO  
EEBD'S OLDER  
THAN 15 YEARS  
ARE REQUIRED  
TO BE  
REPLACED**



## OCENCO M-20.2 EEBD

**THE WORLD'S SMALLEST AND MOST DURABLE EEBD**

A life preserver you wear on your belt: The Ocenco M-20.2 compressed oxygen Emergency Escape Breathing Device provides up to 32 minutes of protection and can be donned in seconds by simply unlatching the case, pulling out the unit, and inserting the mouthpiece and nose clip. With the option to wear the M-20.2 EEBD on a belt it makes it suitable for use in confined spaces.



## SELF CONTAINED BREATHING APPARATUS (SCBA)

### EXCELLENT BREATHING PERFORMANCE

A self-contained breathing apparatus (SCBA), sometimes referred to as a compressed air breathing apparatus (CABA), air-pack, or simply breathing apparatus (BA), is a device worn by ships rescue workers, firefighters, and others to provide breathable air in an IDLH (immediate danger to life and health) atmosphere.

The term "self-contained" means that the breathing set is not dependent on a remote supply (e.g. through a long hose). An SCBA typically has three main components: a high-pressure breathing air cylinder, a pressure regulator and an inhalation connection (mouthpiece, mouth mask or face mask) connected together and mounted to a carrying frame. Our range is specifically chosen to meet maritime needs.





## JUNIOR II-E AIR COMPRESSORS

The Bauer Junior II-E 200 bar compressor is perfectly suited for you to use onboard vessels that need to fill breathing air cylinders regularly but not continuously. It is lightweight, portable and compact allowing you to easily transport it around the vessel. The robust coated frames provide durability and a longer life in the marine environment. Supplied with a 12 month air purification certificate from new.



## POSEIDON AIR COMPRESSORS

The Poseidon Edition provides an excellent price/performance ratio at very high quality. This unit range has been developed for reliable operation combining proven core components from BAUER with a simple and robust chassis. The PE 100 is by far the smallest and lightest compressor unit of the PE range. Supplied with a 12 month air purification certificate from new.



## AIR COMPRESSOR ACCESSORIES

We have a range of breathing air compressors accessories to suit your needs. Including a range of reliable compressor products from Bauer and Survitec, products include:

- Breathing Air Compressors B-Timer
- Bauer Compressor Synthetic Oil 1 and 5 L
- Bauer Compressor Filter Charge
- Bauer Compressor 1 metre/3 metres/50 metres Filling Hose
- Bauer Compressor Change Over Device 300-200 bar
- Bauer Compressor Change Over Device 200-300 bar
- Breathing Air Compressor Quality Test kit
- Adapter for filling EEBD cylinders



## AIR COMPRESSOR SERVICE KIT

Our Junior II-E and Poseidon PE100 compressor service kit include a comprehensive range of spare parts increasing operational reliability. This kit allows servicing for up to 2000 hours or 4 years.



## FIRE BUDDY PLUS SUIT

The Firebuddy Plus fire fighter kit is our top-of-the-range suit using softer flexible materials to give you more freedom of movement. The Firebuddy Plus Kit is an MED approved fireman's outfit comprising of jacket, trousers, helmet, leather gloves and rubber boots. Non-conductive gloves can be supplied as an optional extra if required.

### KEY FEATURES

- ✓ The jacket has a stand-up collar, elasticated cuffs and is closed by a zip covered by an overlapping front
- ✓ The touch and close fastening and elasticated trouser braces allow for the suit to be donned quickly
- ✓ Generous suit sizing to allow for additional clothing
- ✓ Gloves, boots and helmet are EN approved in accordance with med ships wheel
- ✓ Soft flexible materials allow full movement



Safety Torch ATEX

Fire Axe and Axe Cover

Fire Fighters Line with Hook 30M



## FIRE SUIT

The lightweight one-piece firefighter suits provide an ergonomic design for ease of movement.

With multiple pockets for storing accessories, this durable kit launders well, is colour fast and hard wearing requiring minimum maintenance. The complete fire-fighting PPE ensemble includes gloves, boots and helmet. The flash hood is also available as an optional extra.

### KEY FEATURES

- ✓ MED approved



## FIREGUARD SUIT

The Fireguard Suit is a two-piece garment with a two-layer construction of fire resistant natural fibre to EN532. It has been treated with Proban and a water repellent finish, which can withstand 50 washes without degradation.

The jacket has a stand-up collar, elasticated cuffs and is closed by a zip covered by a flap with touch and close fastening to front and collar. The trousers have an elastic halter and plastic adjuster allowing a wide range of wearers. The lower leg is tightened with touch and close straps.

### KEY FEATURES

- ✓ SOLAS approved
- ✓ Supplied as a kit in a valise including Helmet (to EN397), Gloves – inner and outer, Rubber Boots (EN20345)
- ✓ One size only



## FLAMEGUARD MK3 SUIT

The lightweight one-piece suit provides an ergonomic design for ease of movement.

With multiple pockets for storing accessories, this durable kit launders well, is colour fast and hard wearing requiring minimum maintenance. The suit is SOLAS approved. The complete fire-fighting PPE ensemble includes gloves, leather or rubber boots and helmet. The flash hood is available as an optional extra.

### KEY FEATURES

- ✓ Also available in two-piece options with jacket and trousers or jacket and salopettes



Fire 04 HT Helmet



Fire Fighters Boots (MED)



Fire Fighters Boots (SOLAS)



Fire Fighters Gloves



# 2018

On November 30<sup>th</sup>, 2012 the Maritime Safety Committee adopted Resolution MSC.338(91) among which, Chapter II-2 "Construction – Fire Protection, Fire Detection and Fire Extinction" mentions specifically the use of suitable radio equipment.

**SOLAS Chapter II-2, regulation 10.10.4** For ships constructed on or after 1 July 2014, a minimum of two two-way portable radiotelephone apparatus for each fire party for fire-fighters communication shall be carried on board.

These two two-way radiotelephone apparatuses shall be of an explosion-proof type or intrinsically safe. Ship constructed before 1 July 2014 shall comply with the requirements of this paragraph not later than the first survey after 1 July 2018.

## FEATURES

- ✓ ATEX and IECEX approved
- ✓ Programmable option buttons
- ✓ Power save control
- ✓ Priority channel scan
- ✓ Simultaneous use with internal and external microphone
- ✓ Individual and group all capabilities
- ✓ Missed call list option
- ✓ Hearing preservation
- ✓ Group channel settings
- ✓ 255 channels
- ✓ Busy channel lock out
- ✓ Low, medium and high-power output levels
- ✓ Graphic LCD screen with LED indicator

## E-TECH EP 400 FIRE RADIO

COMMUNICATION IS VITAL FOR SAFETY AND EFFICIENCY ON BOARD ALL VESSELS

When it comes to one of the most extreme and dangerous situations crews can face – the outbreak of a fire – the need for efficient communication for the coordination of firefighting is even more vital.

The ATEX approved E-Tech EP 400 UHF Fire Fighter radio is a good quality and cost-effective solution that integrates with SAVOX accessories. This flexibility ensures that the E-TECH EP 400 UHF Fire Fighter radio fulfils the need of most configurations of the fire fighter outfits required under SOLAS.







## ACETYLENE/OXYGEN GAS DISTRIBUTION SYSTEM

### SAFE EFFICIENT ECONOMICAL

Gas cylinders, especially those containing flammable gases, may cause serious accidents if handled carelessly. Moving gas cylinders around is a time-consuming and demanding operation. Survitec Acetylene Oxygen Gas Distribution system is a safe, efficient and economical solution. It is based on safe and correct storing of the gas cylinders on board, in a well-ventilated room with direct access to an open deck with low-pressure piping down to gas outlet station located in workshop, not only making the work efficient, but easy for the crew.



### FEATURES

- ✓ Location of cylinders is known to everyone on board
- ✓ Cylinders can easily be removed in case of a fire on board
- ✓ Gas is available simultaneously from several cylinders when needed
- ✓ Sufficient gas flow for all welding / heating / cutting purposes
- ✓ No interruptions during work due to change of cylinders
- ✓ Gas pressure adjustment at the outlet station, shorter hoses, and no cylinder transport to the worksite
- ✓ The total number of cylinders with regulators, flashback arrestors and hoses on board is reduced
- ✓ Improves work efficiency and protects the crew members from long exposure to the physical hazards of transporting steel cylinders, which can weigh up to 100 kilos.
- ✓ High-pressure flexible hoses compliant to BV and ISO14113
- ✓ Holding a valid ABS PDA certificate



SAFETY IS OUR MISSION  
PROTECTION IS OUR GOAL  
CONFIDENCE IS OUR DRIVER





## GET IN TOUCH

### **SURVITEC**

4th Floor, 12 Finsbury Square, London, EC2A 1AS, United Kingdom

**Email:** [info@survitecgroup.com](mailto:info@survitecgroup.com)

**www.survitecgroup.com**

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