Autronica Fire and Security

# PRODUCTS 2017

Fire and gas safety
**Division Maritime**

AUTRONICA
United Technologies

Autronica Fire and Security is a leading innovator, manufacturer and supplier of fire and gas safety worldwide. Our products ensure safety in applications on land, sea and in the petrochemical, oil and gas sectors.

Owned by United Technologies Corporation (UTC), we employ more than 450 people handling the complete value chain, from idea, development and manufacturing to the marketing, sales and servicing of our products. We are an international company with worldwide offices and our HQ is located in Trondheim, Norway's technology hotspot.

Protecting life, environment, and property

**Autronica Fire and Security AS**
Division Maritime
Bromstadveien 59
NO-7047 Trondheim
Norway

+47 90 90 55 00
**sales.maritime@autronicafire.no**
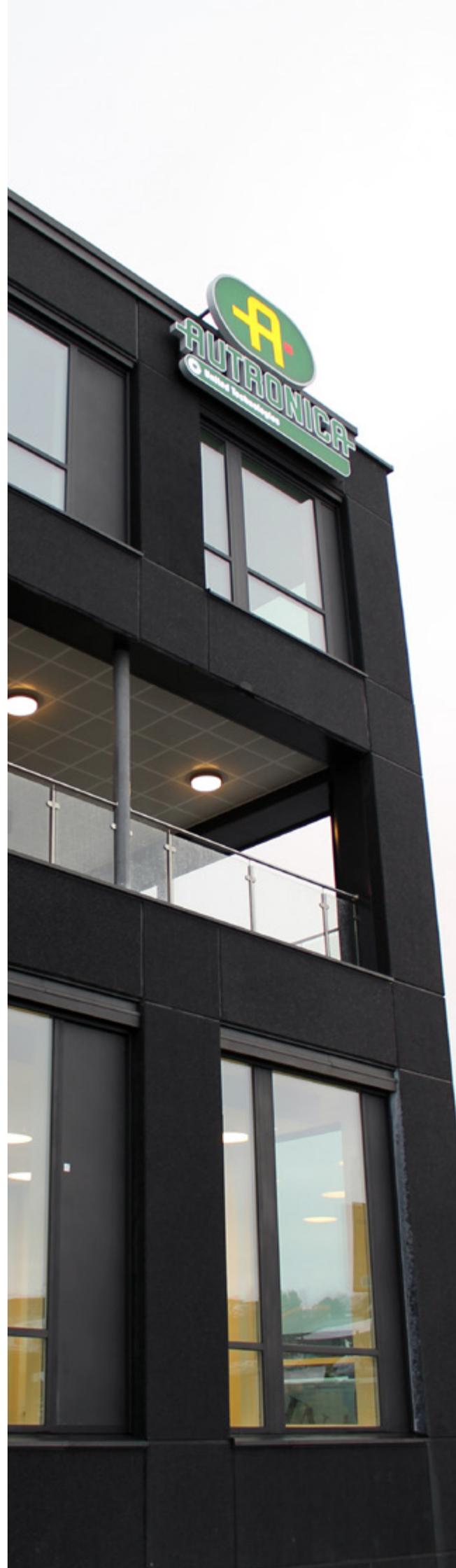**www.autronicafire.com**

**SALES**
Phone: +47 90 90 55 00
sales.maritime@autronicafire.no

**SERVICE ASSISTANCE**
Phone: +47 915 09753
**service.maritime@autronicafire.no**

**ORIGINAL SPARE PARTS**
Phone: +47 90 90 55 00
**spares.maritime@autronicafire.no**

# Contents

Autronica Fire and Security AS has once again taken fire safety to a higher level

# AutroSafe fire detection system

**The next generation in fire safety**

AutroSafe is designed for the toughest requirements and expands the possibilities of a fire detection system even further. From hotels to cruise ships to drilling platforms, AutroSafe delivers the most rigorous fire safety yet.

Autronica Fire and Security launched AutroSafe, our high-end fire detection system, in 1999. From day one, AutroSafe has proven its unique stability and reliability in more than 15 000 installations worldwide, both on- and offshore.

AutroSafe provides advanced functionality for a wide range of applications. The system is designed to meet all requirements in the high-end segment of the onshore, maritime and offshore market, and is certified according to Marine Equipment Directive (MED), European directives (CPD) requiring EN 54 compliance, and Factory Mutual (FM) approval according to NFPA 72.

Reliable communication is paramount to your safety. That's why we're adding AutroNet to the AutroSafe system, an innovative network solution safeguarding communication between panels. AutroNet ensures a redundant and high-speed network expanding the reach of the AutroSafe system even further. The system can be set up either in a star or ring network, depending on your needs.

History proves you can rely on AutroSafe. All existing functionality has stood up to the toughest tests worldwide for more than 10 years. With AutroSafe 4, Autronica has once again taken fire safety to a higher level.

AutroSafe
– a complete solution
for fire detection

AutroMaster

Ethernet switch AutroNet Ethernet switch

Controller Repeater panel Fire alarm control panel Repeater panel Operation panel

Al_Com loop

Al_Com loop

Standard AutroSafe loop units

Aspiration detector

IS isolator unit

AutroSafe IS loop units
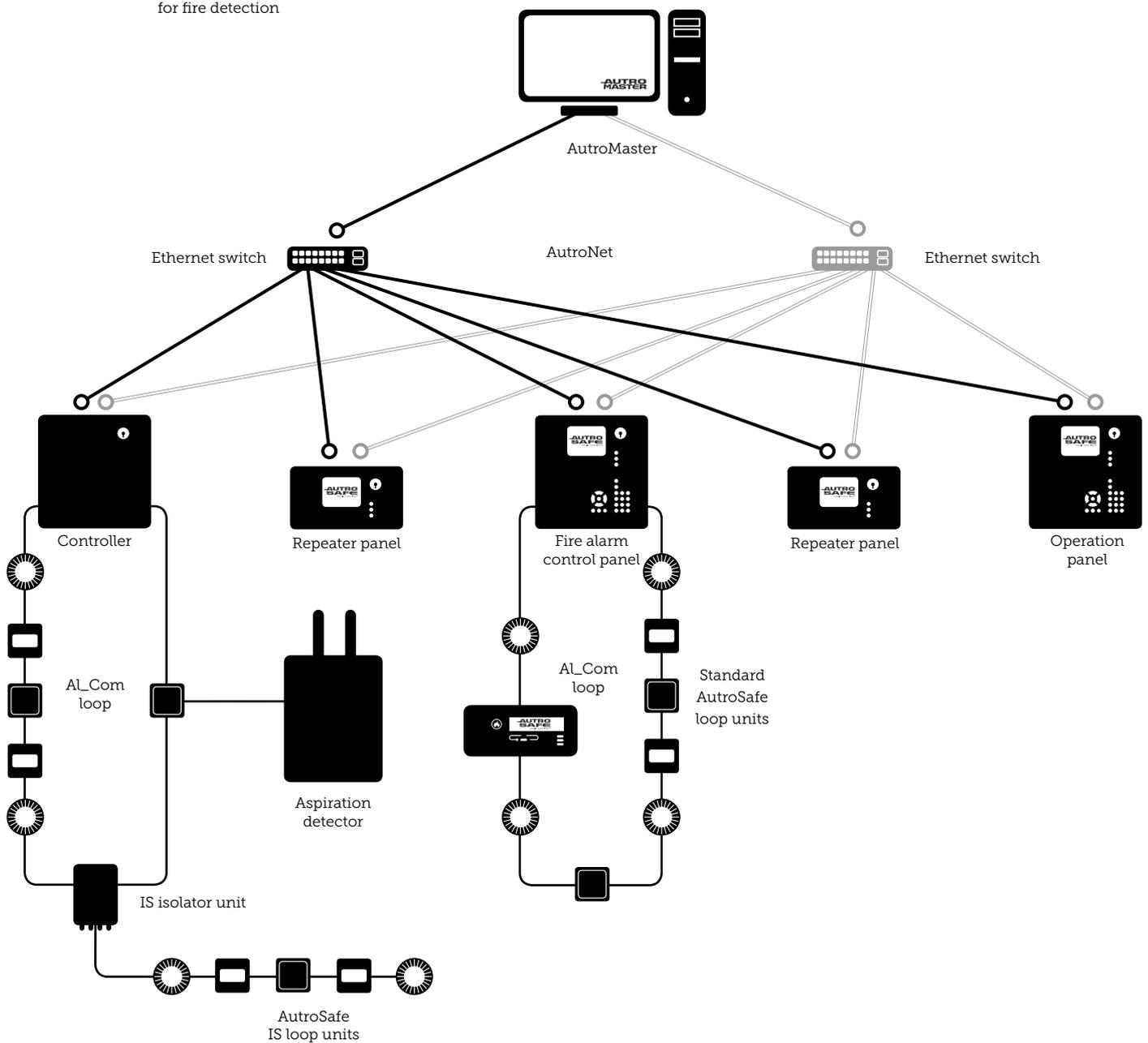
## Panels

The AutroSafe 4 family consists of five different panel types. These are:

- **Fire alarm control panel, BS-420**. BS-420 is the main panel in the AutroSafe family. It can be used as a stand-alone panel as well as part of a network system. All operations, alarm management, indications and other functions within an operation zone are controlled and handled by the panel. The panel is equipped with a display, light indicators, a numeric keypad, a navigation wheel and special function buttons (e.g. Silence Alarms). Loop driver, input and output modules can be connected. An integrated AutroFieldBus interface makes it possible to connect AutroFieldBus equipment to the panel. All AutroSafe systems must include at least one BS-420 panel.

- **Operator panel, BS-430.** As for the BS-420 panel, all operations, alarm management, indications and other functions within an operation zone are controlled and handled by the BS-430 panel. The panel is equipped with a display, light indicators, a numeric keypad, a navigation wheel and special function buttons (eg. Silence Alarms). No loop driver, input or output modules can be connected to this panel.

- **Controller, BC-420.** The BC-420 serves as a connection unit for loop driver modules as well as input and output modules. It is equipped with two light indicators for System Fault and Power. The panel has neither display nor operator buttons. An integrated AutroFieldBus interface makes it possible to connect AutroFieldBus equipment to the panel.

- **Controller rack unit, BC-440.** Serves as a connection unit for the detection loop, alarm sounders, controls and inputs. It is a variant of the BC-420 prepared for rack installations. Together with the I/O modules the unit will have the full functionality of the BC-420. Equipped with 2 Ethernet ports, one AutroFieldBus port and one serial port.

- **Repeater panel, BU-BV-420.** Physical dip-switches on the panel control the BU-BV-420 panel function. As an alarm operation panel it can operate alarms within one or more operation zones. As an information panel no operation of alarms are available. The information panel provides information from one or more operation zones.

- **Power Cabinet BP-405.** Includes a 5A power pack (BPS-405) which provides six 24 VDC /2 A outputs. The input voltage is 115/230 VAC and the total maximum power available is 24 VDC / 5 A. An integrated AutroFieldBus interface makes it possible for the power pack to communicate (send fault messages) with the BS-420 or BC-420 panel. Space for two 12 V / 18 Ah batteries (not included)

## Panel kits

For engineering purposes, we have established kits to be equipped according to specifications.

An Al_Com+ stack can contain up to six loop driver modules (BSD-3xx). By using AutroFieldBus, an additional Al_Com+ stack (with up to six additional loop driver modules) can be added to the system.

NOTE! The AutroSafe panels are certified with the Al_Com+ modules mounted inside the panel cabinet.

| Image | Part number | Description | Including | Options |
|---|---|---|---|---|
| | 116-KIT-BS-420M | Maritime fire alarm control panel kit | Panel front BSV-420M<br>Cabinet UEA-400<br>Power supply module BSS-310A<br>Communication module BSL-310<br>Text foils E-2879 | Loop driver module BSD-310<br>Loop driver module H.P. BSD-311<br>BS-100 loop driver module BSD-330<br>Output module BSB-310A<br>Output module BSJ-310<br>Input module BSE-310<br>Input module BSE-320<br>Dual power monitoring module BSS-311 |
| | 116-KIT-BC-420 | Controller kit | Panel front BCV-420<br>Cabinet UEA-400<br>Power supply module BSS-310A<br>Communication module BSL-310<br>Text foils E-2880 | Loop driver module BSD-310<br>Loop driver module H.P. BSD-311<br>BS-100 loop driver module BSD-330<br>Output module BSB-310A<br>Output module BSJ-310<br>Input module BSE-310<br>Input module BSE-320 |
| | 116-BC-440 | Controller rack unit | – | – |
| | 116-KIT-BS-430 | Operator panel kit | Panel front BSV-420<br>Cabinet UE-1488<br>Text foils E-2879 | – |
| | 116-KIT-BU-BV-420 | Repeater panel kit | Panel front BUV-420<br>Cabinet UE-1489<br>Text foils E-2880 | – |
| | 116-BP-405 | Power cabinet | – | – |

## Loop panels

We have now included loop-powered panels in our portfolio, providing our customers a number of advantages: Quicker installation, reduced cabling and cost, and lowered system complexity. A detection loop can accommodate up to eight loop panels.

| Image | Part number | Description | Dimensions H x W x D (mm) | Current consumption | Notes |
|---|---|---|---|---|---|
|  | 116-KIT-BU-110 | Fire brigade loop panel kit | 310 x 154 x 45 | <1 mA (idle) 6 mA (max) | Enables silencing the panel's internal buzzer, silencing alarms, and resetting the system. Alarms only are shown in the display. |
|  | 116-KIT-BV-110 | Information loop panel kit | 310 x 154 x 45 | <1 mA (idle) 6 mA (max) | Indication device only. Provides information related to the defined operation zone(s). |

## Printer

| Image | Part number | Description |
|---|---|---|
|  | 116-BUP-400 | Printer unit for AutroSafe 4 |
| – | 116-1712-012.0001 | Printer paper 57 x 46 x 13 mm / 25 m |

## Modules

In addition to loop driver modules BSD-310, BSD-310N and BSD-311, as well as the obligatory power supply module BSS-310A and communication module BSL-310, AutroSafe features input and output modules for different applications (monitored alarm loops, servicing relays and LEDs, control inputs, etc.).

The modules have the same format, mount onto the panels' DIN mounting rail and plug into one another.

**Important note on module capacity.**
Each fire alarm control panel/controller contains a power supply module BSS-310A and a communication module BSL-310.
The BS-420 and BC-420 panels have space for up to 12 modules totally inside the cabinet.
An Al_Com+ stack can contain up to six loop driver modules (BSD-3xx)
By using AutroFieldBus, an additional Al_Com+ stack (with up to six additional loop driver modules) can be added to the system.

NOTE! The AutroSafe panels are certified with the Al_Com+ modules mounted inside the panel cabinet.

| Image | Part number | Description | Monitored inputs | Monitored outputs | Total inputs | Total outputs | Monitors short circuits | Ensures loop communication | For use in EX zone 2 only | Amplified power output | Max. per panel | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 116-BSB-310A | Output module | | • | 0 | 4 | • | | | | | Requires external 24V |
|  | 116-BSD-310 | Loop driver module | | | – | – | • | • | | | 6/12 | Max. 127 loop units |
|  | 116-BSD-310/N | Loop driver module | | | – | – | • | • | • | | 6/12 | Max. 127 loop units |
|  | 116-BSD-311 | Loop driver module H.P. | | | – | – | • | • | | • | 6/12 | |

| Image | Part number | Description | Monitored inputs | Monitored outputs | Total inputs | Total outputs | Monitors short circuits | Ensures loop communication | For use in EX zone 2 only | Amplified power output | Max. per panel | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 116-BSD-330 | BS-100 loop driver | | | – | – | • | • | | | 8 | |
|  | 116-BSE-310 | Input module | • | | 4 | 0 | | | | | | |
|  | 116-BSE-320 | Input module | | | 8 | 0 | | | | | | Galvanically insulated inputs |
|  | 116-BSJ-310 | Output module | | | 0 | 8 | | | | | | Open transistor outputs |
|  | 116-BSS-310A | Power supply module | | | | | | | | | 3 | |
|  | 116-BSS-311 | Dual power monitoring module | | | | | | | | | 2 | |
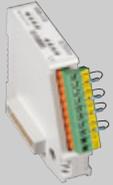
## Communication

| Image | Part number | Description |
|---|---|---|
| | 116-BSD-321/1 | AutroFieldBus protocol converter<br>Interface between AutroFieldBus and Al_Com+. Enables communication between all Al_Com+ modules in an Al_Com+ stack connected to AutroFieldBus. The module enables AutroSafe Dual Safety configuration, with both ordinary Al_Com communication and AutroFieldBus. |
| | 116-BSL-310 | AutroSafe communication module, serves as an interface for the common internal communication line between all the different I/O modules. Part of the fire alarm control panel. |
| | 116-BSL-321 | Multi-mode fibre optic converter<br>Amplifier for AUTROLON/AutroFieldBus networks, which acts as a fibre-optic modem. The converter ensures reliable communication for distances of up to 3000 m. Uses multi-mode (62.5/125 µm or 50/125 µm) fibre-optic cable. Ingress Protection level: IP20 |
| | 116-BSL-322 | Single mode fibre optic converter<br>Amplifier for AUTROLON/AutroFieldBus networks, which acts as a fibre-optic modem. The converter ensures reliable communication for distances of up to 15000 m. Uses single-mode (9/125 µm) fibre-optic cable. Ingress Protection level: IP20 |
| | 116-BSL-325 | AUTROLON/AutroFieldBus communication amplifier<br>Amplifier for communication signals on networks. The amplifier ensures reliable communication in systems where there is great distance between the system panels, and in applications where there are many panels. The amplifier increases maximum cable length from 1000 m to 2800 m. Ingress Protection level: IP20 |
| | 116-BSL-337 | AutroSafe BU-70 interface module<br>Enables the connection of BU-70/BU-100/BU-101 to AutroSafe. This is a simple, cost effective way to upgrade BS-100 systems to AutroSafe. The RS232/20 mA current loop converter BSL-12/2 must be used to convert RS232 to 20 mA current loop communication. Ingress Protection level: IP20 |

## Service tools

| Part number | Description |
| --- | --- |
| 116-WAS-2000 | AS2000, loop diagnostic tool in casing, including PC cable |
| 116-XJA-027 | Connection cable for AS2000; for connection between computer and fire alarm panel |
| 116-XGE-1/10-110 | Ribbon cable for connection of BSF-310/BSA-400 to BSL-310. 110 cm. Order only. |
| 116-XGE-1/10-200 | Ribbon cable for connection of BSF-310/BSA-400 to BSL-310. 200 cm. |
| 116-XL-073 | Conversion cable from AutroSafe 3 to AutroSafe 4 |

## Customer configuration

| Part number | Description |
| --- | --- |
| 116-PROG-AUTROSAFE | Customer specific software for AutroSafe |
| 116-TXT-AUTROSAFE | Customer text/controls |

## OPC server

With the AutroSafe OPC server several fire detection systems and other control systems can communicate. The solution improves the compatibility between the AutroSafe and surveillance systems from other manufacturers.

| Part number | Description |
| --- | --- |
| 116-AS-OPC-SERVER/CD1 | AutroSafe OPC server CD V1.2 incl. access code for access level 1. Includes read access to all status information for detectors, output and alarm devices. This level of license will also make it possible to send (write) Silence, Reset and SetTime commands to the AutroSafe system. Within this level you can also Disable/Enable detectors. |
| 116-AS-OPC-SERVER/CD2 | AutroSafe OPC server CD V1.2 incl. access code for access level 2. Includes all functionality in level 1, plus the possibility to Activate/Deactivate and Enable/Disable outputs and alarm devices via OPC write commands. |
| 116-AS-OPC-SERVER/CD3 | AutroSafe OPC server CD V1.2 incl. access code for access level 3. Includes all functionality in level 1 and 2. This level also provides additional information for points, for example AMEAS, Temp, Smoke, Alarm limits and Engineering values. |

# AutroSafe maritime gas detection system

**A new era in maritime gas detection**

Autronica is a long-standing player in the maritime market; our reputation as a developer and supplier of reliable systems designed to withstand the rigours of the maritime environment is forged from our dedication to developing the best solutions for this market.

Our task was demanding, yet simple: Take the best fire and gas (F&G) safety system around and make it the best Gas system ever. The AutroSafe 4 Maritime Gas system is developed using the same proven in use design and technology as the AutroSafe 4 Integrated Fire & Gas system. All existing functionality has stood up to the toughest tests worldwide for more than 10 years. AutroSafe 4 Maritime Gas supports a wide range of third-party gas detection devices, allowing flexibility and accuracy.

Addressability ensures that correct information is routed to where it is needed, indicating which detection unit has given the alarm. Built-in fault monitoring ensures that if a detection unit fails, it is automatically identified and can be replaced with a minimum of effort.

BS-420MG is a maritime gas alarm control panel with full operation capabilities. All gas alarm handling and system features can be controlled and monitored from the panel. Note that the panel cannot be used for detection of fires. The panel communicates with other system units on the Ethernet-based local area network, AutroNet. The maximum number of system units supported by AutroNet depends on the type of system. In a standard system the maximum number is 64. The panel can accommodate up to a maximum of 12 I/O modules. All modules are easily plugged onto each other on a standard mounting rail inside the unit.

## Panel

| Image | Part number | Description | Including | Options |
|---|---|---|---|---|
|  | 116-KIT-BS-420MG | Maritime gas alarm control panel kit | Panel front BSV-420M<br>Cabinet UEA-400<br>Power supply module BSS-310A<br>Communication module BSL-310<br>Text foils E-2879 | Output module BSB-310A<br>Output module BSJ-310<br>Input module BSE-310<br>Input module BSE-320<br>Dual power monitoring module BSS-311 |

## Maritime gas detectors

| Image | Part number | Description | Stainless steel housing | With hydrophobic filter/ weather baffle | Addressable for maritime gas panel | 4-20 mA | Cable entries | Notes |
|---|---|---|---|---|---|---|---|---|
|  | 116-010195-056 | AutroPoint Maritime Gas detector | • | • | • |  | 2xM25 |  |
|  | 116-010195-057 | AutroPoint Maritime Gas detector | • |  | • |  | 2xM25 |  |
|  | 116-010195-058 | AutroPoint Maritime Gas detector | • | • |  | • | 2xM25 |  |
|  | 116-010195-059 | AutroPoint Maritime Gas detector | • |  |  | • | 2xM25 |  |

## 4-20 mA interface modules

| Image | Part number | Description |
|---|---|---|
| | 116-BN-342/1 | PowerLoop 4-20 mA input unit, rack mounted<br>A general-purpose PowerLoop interface designed for third-party detectors connected to the AutroSafe IFG system. The unit has a 4-20 mA input galvanically isolated from the PowerLoop. 19" 3U rack version, bare PCB with 19" rack front panel, no DC/DC. Ingress Protection level: IP20 |
| | 116-BN-342/2 | PowerLoop 4-20 mA input unit, DIN rail mounted<br>A general-purpose PowerLoop interface designed for third party detectors connected to the AutroSafe IFG system. The unit has a 4-20 mA input galvanically isolated from the PowerLoop. DIN rail version, bare PCB in an open DIN rail box, no DC/DC. Ingress Protection level: IP20 |
| | 116-BN-342/EX | PowerLoop 4-20 mA input unit, field mounted<br>A general-purpose PowerLoop interface designed for third party detectors connected to the AutroSafe IFG system. The unit has a 24 VDC/400 mA supply output providing power to the connected detectors, plus a 4-20 mA input galvanically isolated from the PowerLoop. EEX me version including 9,5 W 24 VDC/DC for external detector power supply.<br>Cable entry, PowerLoop: 2 x M25. Cable entry, 4-20 mA input: 1 x M25<br>Ingress Protection level: IP66 |
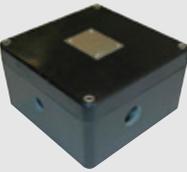
## Accessories

| Part number | Description |
|---|---|
| 116-007355-001 | Duct mount assembly for AutroPoint Maritime Gas detectors. One duct air inlet tube and one return tube.<br><br>Pipe length to be specified: 1ft/305mm (116-000214-281), 3ft/915mm (116-000214-282), 6ft/1830mm (116-000214-283) or 10ft/3050mm (116-000214-284) |
| 116-007525-003 | Direct duct mount kit for AutroPoint Maritime Gas detectors |
| 116-US-843 | Rain and sun shield for AutroPoint Maritime Gas detectors |

Simple, reliable and flexible
fire detection system

# Autroprime fire detection system

**Fire detection system for small-to-medium sized installations**

Autroprime brings simplicity, quality and extensive functionality in one integrated system, providing safety and economy in a complete package. Our SelfVerify technology make sure the system takes care of everyday maintenance routines by itself.

Autronica's products have always been associated with innovating high quality technologies, challenging your way of thinking about fire detection. Autroprime® is no exception; the system includes many tried and tested Autronica technologies. The very good news is the achievement of combing high-end features, easy engineering and low life cycle cost.

Autroprime® is the ideal choice for protecting life and property in the merchant ships´ market. The system with its four loops, finally brings a truly integrated concept to fire safety with its possibility to provide interface to the FlexiFOG® water mist system, or to a third party system.

Autroprime® finally brings a truly integrated concept to fire detection: everything is in place, and system functionality and reliability have never been better. Low-level simplicity ensures that this fire detection system exceeds expectation and provides next-generation possibilities, all for a low life-cycle cost.

Autroprime is approved according to EN 54/2 and 4 and SOLAS.

## Panels

The Autroprime system allows for a combination of maximum 8 panels and mimic drivers on a redundant panel bus. Ingress Protection level all panels: IP32.

| Image | Part number | Description | Dimensions L x W x D (mm) | Notes |
|---|---|---|---|---|
| | 116-71211548 | Fire alarm control panel BS-200M | 420 x 346 x 140 | Full fire detection system with 4 loop drivers each controlling 127 devices. The operator panel may be mounted remotely with redundant connections both for signal and power. With space for batteries. |
| | 116-71211549 | Fire alarm control panel BS-200M | 420 x 346 x 140 | Full fire detection system with 4 loop drivers each controlling 127 devices. The operator panel may be mounted remotely with redundant connections both for signal and power. An extra termination block is included for simplified panel bus and RS232/-244/-485 connection. With 230 VAC main and emergency power inputs. |
| | 116-71211550 | Fire alarm control panel BS-200M | 420 x 346 x 140 | Full fire detection system with 4 loop drivers each controlling 127 devices. The operator panel may be mounted remotely with redundant connections both for signal and power. An extra termination block is included for simplified panel bus and RS232/-244/-485 connection. With 110 VAC main and emergency power inputs. |
| | 116-BS-211 | Repeater panel | 310 x 220 x 45 | Helps users manage alarms and other events. Panel bus included |
| | 116-BU-210 | Fire brigade panel | 310 x 154 x 45 | Showing alarms only. The user may mute the internal buzzer, silence sounders/bells and reset the system. Panel bus included. |
| | 116-BV-210 | Information panel | 310 x 154 x 45 | Provides all information, but does not allow handling of events. Panel bus included |
| | 116-BC-250 | Controller unit | 441 x 217 x 63 | In combination with Operator Panel BS-210 (an integrated part of Fire Alarm Control Panel BS-200M) it can serve as a stand-alone panel. All alarm handling and system features are configured, controlled and monitored from the BS-210. |
| | 116-71211551 | Mimic driver BUR-200M | 181 x 125 x 40 | Panel bus included. With termination blocks. 8 in/16 out |

## Panel kits

Prefabricated products for console and cabinet mounting. The units are delivered with a standardized configuration for maritime installations.

| Part number | Description | Dimensions L x W x D (mm) |
|---|---|---|
| 116-AP-MAR-CAB | Autroprime in cabinet, without Mimic driver | 600 x 760 x 350 |
| 116-AP-MAR-CAB-BUR | Autroprime in cabinet, with Mimic driver | 600 x 760 x 350 |
| 116-AP-MAR-PLATE | Autroprime on mounting plate, without Mimic driver | 310 x 154 x 45 |
| 116-AP-MAR-PLATE-BUR | Autroprime on mounting plate, with Mimic driver | 549 x 730 x 127,5 |
| 116-KIT-BS-250 | Autroprime controller unit BC-250 with operator panel | 420 x 346 x 140 |

## Printer

| Image | Part number | Description |
|---|---|---|
|  | 116-BUP-200 | Printer unit for Autroprime |
| – | 116-1712-012.0001 | Printer paper 57 x 46 x 13 mm / 25 m |

## Modules

| Part number | Description |
|---|---|
| 116-BSD-200A/PACK | Autroprime loop extension pack, 2 loops |
| 116-BSA-200A | Autroprime main circuit board |

## Service and configuration tool

| Part number | Description |
|---|---|
| 116-AUTROCLIENT | AutroClient, latest version |

# Fire detection system accessories

In order to project our fire detection system to any application, we provide a wide range of accessories such as cabinets, racks, mounting equipment, batteries etc.

## Power supply units

| Part number | Description | Output voltage |
|---|---|---|
| 116-BPS-405/BOXED | Power supply unit for AutroSafe 4 | 24 VDC / 5 A |
| 116-BPS-410/BOXED | Power supply unit for AutroSafe 4 | 24 VDC / 10 A |
| 116-BPS-410/115/BOXED | Power supply unit for AutroSafe 4, 115 VAC | 24 VDC / 10 A, |
| 116-4550-004.0001 | Power supply for Autroprime SC-150 27ME | 24 VDC / 5 A, 110/230 VAC |
| 116-4550-012.2410 | Power supply with fault output for all systems | 24 VDC / 10 A, 110/230 VAC |
| 116-4660-055.0001 | DC/DC converter | 24 VDC / 6,3 A |
| 116-8147-015.5120 | Transformer | 110-130 VAC / 220 VAC, 200 VA |
| 116-8147-038.5130 | Transformer | 110-130 VAC / 220 VAC, 300 VA |

## Batteries

Autronica Fire and Security AS offers accumulator batteries for every Autronica fire detection system. Generally, 24 VDC backup is used, requiring two batteries per panel. All batteries are sealed and can be placed in cabinets.

| Part number | Description | Voltage | Weight | Dimensions L x W x H (mm) |
|---|---|---|---|---|
| 116-4160-001. | FIAMM FG20721 | 12V / 7.2 Ah | 2,4 kg | 79 x 56 x 106 |
| 116-4160-002. | FIAMM FG21803 | 12V / 18 Ah | 5,9 kg | 181 x 76 x 167 |
| 116-4160-003. | FIAMM FG22703 | 12V / 27 Ah | 8,7 kg | 166 x 175 x 125 |
| 116-4160-004. | FIAMM FG24204 | 12V / 42 Ah | 13,8 kg | 196 x 163 x 174 |
| 116-4160-005. | FIAMM FG20201 | 12V / 2.0 Ah | 0,9 kg | 178 x 34 x 65 |
| 116-4160-005.0001 | FIAMM FG21202 | 12V / 12 Ah | 4,0 kg | 151 x 98 x 99 |
| 116-4160-005.0003 | FIAMM FG20341 | 12 V / 3 Ah | 1,41 kg | 134 x 67 x 60 |
| 116-4160-005.0005 | FIAMM FG20451 | 12V / 4,5 Ah | 1,6 kg | 90 x 70 x 106 |
| 116-4160-006. | FIAMM FG27004 | 12V / 70 Ah | 22,0 kg | 350 x 166 x 174 |
| 116-4160-006.0001 | Sonnenschein A512/115 | 12V / 115 Ah | 40,0 kg | 286 x 269 x 230 |
| 116-4160-006.0003 | Sonnenschein A512/85 | 12V / 80 Ah | 31,0 kg | 330 x 171 x 236 |
| 116-4160-006.0004 | Sonnenschein A115/200 | 12V /200 Ah | 70,0 kg | 518 x 274 x 242 |

# Switches

A network solution (AutroNet) with more than two panels demands the use of switches. Only Phoenix Ethernet switches are approved and supported by Autronica Fire and Security AS. The type and number of switches depends on the installation/network construction (no. of panels and distance between panels and switches)

| Image | Part number | Description* | Current consumption (max.) @ 24 VDC | RJ45 ports | Fibre optic ports** | Operating temperature |
|---|---|---|---|---|---|---|
| | 116-5151-030.2127 | FL switch SFNT 5TX | 120 mA | 5 | – | -40 - 75°C |
| | 116-5151-030.2128 | FL switch SFNT 4TX/FX | 160 mA | 4 | 1 MM (SC) | -40 - 75°C |
| | 116-5151-030.2129 | FL switch SFNT 8TX | 153 mA | 8 | – | -40 - 75°C |
| | 116-5151-030.2130 | FL switch SFNT 7TX/FX | 175 mA | 7 | 1 MM (SC) | -40 - 70°C |
| | 116-5151-030.2131 | FL switch LM 5TX | 150 mA | 5 | – | -40 - 70°C |
| | 116-5151-030.2132 | FL switch LM 4TX/FX | 380 mA | 4 | 1 MM (SC) | -40 - 70°C |

* SFNT = Standard Function, Narrow housing, high Temperature range
  LM = Lean Managed
  SFNB = Standard Function, Narrow housing, Basic entry level
  SFN = Standard Function, Narrow housing

** MM = Multi Mode
  SM = Single Mode
  SC = Square Connector
    (Set and Click, Stab and Click, Standard Connector)

| Image | Part number | Description* | Current consumption (max.) @ 24 VDC | RJ45 ports | Fibre optic ports** | Operating temperature |
|---|---|---|---|---|---|---|
| | 116-5151-030.2133 | FL switch LM 4TX/2FX | 400 mA | 4 | 2 MM (SC) | -40 - 70°C |
| | 116-5151-030.2134 | FL switch LM 4TX/FX SM | 380 mA | 4 | 1 SM (SC) | -40 - 70°C |
| | 116-5151-030.2135 | FL switch LM 4TX/2FX SM | 400 mA | 4 | 2 SM (SC) | -40 - 70°C |
| | 116-5151-030.2142 | FL switch SFNB 4TX/FX SM 20 | 185 mA | 4 | 1 SM (SC) | 0 - 60°C |

\* SFNT = Standard Function, Narrow housing, high Temperature range  
 LM = Lean Managed  
 SFNB = Standard Function, Narrow housing, Basic entry level  
 SFN = Standard Function, Narrow housing  

\*\* MM = Multi Mode  
 SM = Single Mode  
 SC = Square Connector  
 (Set and Click, Stab and Click, Standard Connector)

## Cabinets and racks

| Part number | Description | System | W x H x D (mm) | Capacity |
|---|---|---|---|---|
| 116-BV-311 | Cabinet for evacuation and emergency documents | AutroSafe | 402 x 347 x 75 | |
| 116-UEA-323/1 | Cabinet for flush mounting BS-410/-420/BC-420 | AutroSafe | Flush mounting: 320 x 320 x 140 | |
| 116-UE-1710 | Battery shelf | 19" rack | 398 x 190 x 174 | 2 x 12 V / 36 Ah or 1 x 12 V / 65 Ah battery |
| 116-US-820/1 | Document holder with logo | All | | |

## Mounting accessories for cabinets/racks

| Part number | Description |
|---|---|
| 116-UB-383 | 19" subrack 160 mm, Europe for BC-440 |
| 116-UE-474 | Mounting plate with cutouts |
| 116-UE-1662 | Spacer between 2 rack mounted AutroSafe BS/BC-320 panels. Distance between panels = 80 mm |
| 116-UW-1454 | Mounting kit for BS-420/-430 and BC-420 front panels in 19" cabinet/rack, for use with UEA-323/1 |
| 116-UW-1482 | Mounting kit for BU-BV-420 cabinet in 19'' cabinet/rack. Front panel |
| 116-UW-1454 | Mounting plate for flush mounting BS-420/-430 and BC-420 panel fronts in 19" rack |
| 116-UW-1516/1 | Dummy plate 19" for BC-440, 3U x 12HP |
| 116-UW-1518 | Mounting plate for mounting AutroSafe 4 front panel on double BS-100 cabinet |
| 116-6175-100.0010 | Ferrite clamps |
| 116-6745-012. | Standard fire key for panel door (plastic) |

Rittal cabinets available on request.

## Relays

| Part number | Description |
|---|---|
| 116-7624-030.0001 | Relay PLC RSC 24DC/21, single change-over contact |
| 116-7624-030.0002 | Relay PLC RSC 24DC/21-21, double change-over contact |
| 116-7624-030.1001 | Relay PLC RSC 230UC/21, single change-over contact |
| 116-7633-060. | Relay with adjustable time delay 50 ms –10 h, 12–24 V |
| 116-7461-008.0001 | Relay base Z-348 for timers |
| 116-BSX-310 | Relay kit for FARE and FWRE |

## Miscellaneous

| Image | Part number | Description |
|-------|-------------|-------------|
| | 116-6731-017.0002 | Door magnet armature. Type AG w/adjustable socket. For use with part no: 116-6731-017.0005 |
| | 116-6731-017.0005 | Door holding magnet. GPT, holdpower 650 N, 1 W, 40 mA. Manual release push button. DNV approved. For use with part no: 116-6731-017.0002 |
| | 116-6731-017.0010 | Robust magnetic door release w/counter plate, 50 kg, 490 N |
| | 116-UV-028-T | Release button for magnet with impulse switch |
| | 116-BF-9 | General alarm push button |
| | 116-4860-010.9001 | General alarm push button, bulkhead mounting, IP66 |

# PLC equipment

| Part number | Description |
| --- | --- |
| **PCD2** | |
| 116-KDX-30/2C100 | Expansion module (8 I/O modules) |
| 116-KDD-30/2F520 | Communication module RS232 and RS422/-485 |
| **Modules for PCD1 and PCD2** | |
| 116-KDB-30/2A250 | A250 8 outputs relay 48 VAC / 2 A |
| 116-KDB-30/2A400 | I/O module, 8 outputs |
| 116-KDB-30/2E110 | I/O module |
| 116-5151-025.E165 | E165 16 inputs 24 VDC |
| 116-KDU-30/7F110 | F110 communication module RS422/-485 |
| **PCD3** | |
| 116-5151-025.M544 | M5440 PLC for 4 modules |
| 116-5151-025.M554 | M5540 PLC for 4 modules |
| 116-5151-025.T760 | T760 remote unit for 4 I/O modules |
| 116-5151-025.C100 | C100 expansion unit for 4 I/O modules |
| 116-5151-025.K106 | K106 extension cable 0.7 m |
| 116-5151-025.K010 | K010 extension plug PCD3-PCD3 |
| **Modules PCD3** | |
| 116-5151-025.A400 | A400 8 outputs 24 VDC/0.5 A |
| 116-5151-025.A465 | A465 16 outputs 24 VDC/0.5 A |
| 116-5151-025.E110 | E110 8 inputs 24 VDC 8 ms |
| 116-5151-026.E165 | E165 16 inputs 24 VDC |
| 116-5151-025.E610 | E610 8 inputs isolated 24 VDC 8 ms |
| 116-5151-025.0001 | I/O plug spring coupl. 10-P |
| **Miscellaneous** | |
| 116-KD-30/7T100 | Repeater RS485 with galvanic isolation |

SelfVerify ensures
optimal detection

# Loop units

**A wide range covering your basic fire detection needs**

We provide a wide range of loop units for our fire detection systems. Our detectors, manual call points, I/O units, control units and alarm units are developed and approved according to European directives (CPD) requiring EN 54 compliance and other appropriate worldwide regulations.

The loop units are available both with and without SelfVerify function. SelfVerify solves all issues of manual maintenance, leaving time consuming and costly physical testing redundant. With AutroSafe SelfVerify®, the system checks all detectors, interfaces, connections and cables – from detector chamber to alarm output – every single day.

Not only does the system test whether a detector is capable of provoking an alarm, it even verifies the sensitivity of every detector with a calibrated signal. The SelfVerify system ensures that each detector always responds to the correct alarm level. In the event of irregularities, the display on the operating panel will accurately pinpoint the source of any problem.

SelfVerify ensures that you have the safest and most reliable fire safety system available – a system ensuring optimal detection.

# Input and output units

We offer a wide range of interactive input and output units for many different applications.
The system features Exn-, Exia- and Exd approved input and output units for high risk applications.

All input and output units feature automatic addressing and short-circuit protection.

| Image | Part number | Description | Configurable input | Monitored input | Monitored output | Inputs/outputs | Requires external PSU | SelfVerify | For use in EX areas | Ingress Protection level* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 116-BN-180 | AutroKeeper | | | | 2/2 | | • | | IP30 | Use two units to access one loop from two loop controllers. DIN rail mounting in cabinet. For AutroSafe only |
| | 116-BN-201 | Monitoring unit | • | • | | 1/0 | | | | IP54 IP67 | |
| | 116-BN-303 | Single monitored input unit | • | • | | 1/0 | | • | | IP54 IP67 | Function selectable via dip switch |
| | 116-BN-304 | Input/output unit | • | • | | 1/1 | | • | | IP54 IP67 | Function selectable via dip switch |
| | 116-BN-305 | Dual monitored input/output unit | • | • | | 2/2 | | • | | IP54 IP67 | Function selectable via dip switch |

*: When two degrees of protection is given, the lowest is relevant when using the included glands. To achieve the highest, special IP67 glands must be ordered (see page 43)

| Image | Part number | Description | Configurable input | Monitored input | Monitored output | Inputs/outputs | Requires external PSU | SelfVerify | For use in EX areas | Ingress Protection level* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 116-BN-307 | Monitored fire alarm device control unit | | • | | 0/1 | • | • | | IP54 IP67 | |
| | 116-BN-320 | Interface unit | • | • | | 2/1 | | • | | IP54 IP67 | For AutroFlame detectors |
| | 116-BNB-330A | Loop adapter unit for conventional loops | | | | | • | | | IP20 | Replacement unit for BNB-330 in existing AutroSafe 3 systems |
| | 116-BNB-331 | Loop adapter unit for conventional loops | | | • | 1/1 | • | • | | IP20 | AutroSafe ver. 4.4.1 → Autroprime ver. 2.0 → |
| | 116-BN-500/EX | Input unit | • | • | | 1/0 | | • | • | IP54 IP67 | For interfacing external units, clean contacts, alarm relays, etc. Zones 0, 1 & 2 |
| | 116-BN-500/N | Input unit | • | • | | 1/0 | | • | • | IP54 IP67 | For interfacing external units, clean contacts, alarm relays, etc. Zone 2 |

*: When two degrees of protection is given, the lowest is relevant when using the included glands. To achieve the highest, special IP67 glands must be ordered (see page 43)

## Detectors

We offer a wide range of interactive detectors for many different applications, with or without SelfVerify. The following series are available:
- 200 series, standard interactive addressable detectors.
- 300 series with SelfVerify, interactive addressable detectors.
- 500 series with SelfVerify, interactive addressable detectors for use in demanding environments.

The system also offers Exn- and Exia approved versions of detectors designed for use in high risk applications. S series smoke detectors are specially designed for applications where high sensitivity is required.

| Image | Part number | Heat | Smoke | MultiSensor | Including base | SelfVerify | Environmentally protected | For use in EX areas | For use in EX zone 2 only | High sensitivity | Sealed unit | Wet/dry areas | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 116-5861-033.0150 | • | | | • | | • | | | | • | W/D | IP65 | SWM-1KL 140°C |
| | 116-BD-200M | • | | | • | | • | | | | • | W | IP56 | For steam saunas/cold stores (-30 ºC) |
| | 116-BD-501 | • | | | • | • | • | | | | • | W | IP56 | |
| | 116-BD-501/EX | • | | | • | • | • | • | | | • | W | IP56 | |
| | 116-BD-501/N | • | | | • | • | • | | • | | • | W | IP56 | |
| | 116-BDH-200 | • | | | | | | | | | | D | IP44D | |
| | 116-BDH-300 | • | | | | • | | | | | | D | IP44D | |
| | 116-BDH-500/EX | • | | | | • | • | • | | | | | IP44D | |
| | 116-BDH-500/EXE | • | | | | • | | • | | | | | IP44D | RIME approved/NK |
| | 116-BDH-500/N | • | | | | • | | | • | | | | IP44D | |
| | 116-BHH-200 | | • | | | | | | | | | | IP44D | |
| | 116-BHH-300 | | • | | | • | | | | | | | IP44D | |
| | 116-BHH-500/EX | | • | | | • | • | • | | | | | IP44D | |
| | 116-BHH-500/EXE | | • | | | • | • | • | | | | | IP44D | RIME approved/NK |
| | 116-BHH-500/N | | • | | | • | • | | • | | | | IP44D | |
| | 116-BHH-500/S/Ex | | • | | | • | • | • | | • | | | IP44D | |
| | 116-BHH-500/S/N | | • | | | • | • | | • | • | | | IP44D | |
| | 116-BHH-220 | | | • | | | | | | | | | IP44D | |
| | 116-BHH-320 | | | • | | • | | | | | | | IP44D | |
| | 116-BHH-520/EX | | | • | | • | • | • | | | | | IP44D | |
| | 116-BHH-520/EXE | | | • | | • | • | • | | | | | IP44D | RIME approved NK |
| | 116-BHH-520/N | | | • | | • | • | | • | | | | IP44D | |

# Manual call points / release stations

We offer a wide range of interactive manual call points for different applications, every unit features SelfVerify. Two main series are available:

- 300 series with SelfVerify, interactive addressable manual call points.
- 500 series with SelfVerify, interactive addressable manual call points for use in demanding environments.

The system features Exn- and Exia approved versions for high risk applications.

| Image | Part number | Description | For use in EX areas | For use in EX zone 2 only | Watertight / outdoor model | Extreme environments | LED indicator | Metal connection box | Glass NOT included | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 116-BF-300V2 | Manual call point | | | | | • | | | IP42D w/o cover<br><br>IP44D w cover | |
| | 116-BF-510WP-H | Manual call point | | | • | • | • | | | IP52 w/o cover<br><br>IP55 w cover | |
| | 116-BF-510WP-HM | Manual call point | | | • | • | • | | | IP52 w/o cover<br><br>IP55 w cover | Cable glands pre mounted, robust mounting plate. |
| | 116-BF-500V2/EX | Manual call point | • | | | | | | | IP44D* | |
| | 116-BF-500V2/N | Manual call point | | • | | | | | • | IP66 | |

*: Ingress Protection level, inner housing.

| Image | Part number | Description | For use in EX areas | For use in EX zone 2 only | Watertight / outdoor model | Extreme environments | LED indicator | Metal connection box | Glass NOT included | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 116-BF-501 | Manual call point | | | • | • | | | | IP66 | |
| | 116-BF-501/EX | Manual call point | • | | • | • | | | | IP66 | |
| | 116-BF-501/N | Manual call point | | • | • | • | | | | IP66 | |
|  | 116-BF-502 | Manual call point | | | • | • | | | | IP66 | |
| | 116-BF-502/EX | Manual call point | • | | • | • | | | | IP66 | |
| | 116-BF-502/N | Manual call point | | • | • | • | | | | IP66 | |
|  | 116-BFG-3/XX | Glass for call point, available in several languages. Replace XX with country code.<br>No ending = No text<br>GB = English<br>GB/AR = English and Arabic<br>N/GB = Norwegian and English<br>SU = Russian | | | | | | | | | |

# Alarm units

We offer a wide range of alarm units for connection to detection loops or dedicated alarm outputs.

| Image | Part number | Description | Alarm output mounting | Loop mounting | Electronic | Signal presets | Configurable | Watertight | Sound | Light | Sound output (dBA/1 m) | Light output (Candela/Joule) | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 116-BBL-100 | Alarm indicator | | • | | | | | | • | – | 2 c | IP32C | |
| | 116-BBL-100/IP | Alarm indicator | | • | | | | • | | • | – | 2 c | IP65 | |
| | 116-BBR-7M | Alarm bell 6″ | • | | | | | | • | | 93 | – | IP55 | |
| | 116-BBR-24 | Alarm bell 6″ | • | | | | | | • | | 91 | – | IP42 | |
| | 116-BBR-130 | Base sounder | | • | • | | • | | • | | 90 | – | IP32C | Combined detector base and addressable sounder. |
| | 116-BBR-230 | Sounder | | • | | | • | | • | | 100 | – | IP32C | |

| Image | Part number | Description | Alarm output mounting | Loop mounting | Electronic | Signal presets | Configurable | Watertight | Sound | Light | Sound output (dBA/1 m) | Light output (Candela/Joule) | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 116-BBR-230/IP | Sounder | | • | | | • | • | • | | 100 | – | IP65 | |
| | 116-BBQ-130 | Base sounder w/alarm indicator | | • | | | • | | • | • | 90 | 2 c | IP21C | Combined detector base and addressable sounder/alarm indicator. |
| | 116-BBQ-230 | Sounder/alarm indicator | | • | | | • | | • | • | 100 | 2 c | IP32C | |
| | 116-BBQ-230/IP | Sounder/alarm indicator | | • | | | • | • | • | • | 100 | 2 c | IP65 | |
| | 116-BU-47 | Alarm indicator | • | | | | | | | • | – | | IP30 | With LED |
| | 116-4340-003.4001 | Signal light BLG-LED | • | | • | • | • | • | | • | – | – | IP67 | |

| Image | Part number | Description | Alarm output mounting | Loop mounting | Electronic | Signal presets | Configurable | Watertight | Sound | Light | Sound output (dBA/1 m) | Light output (Candela/Joule) | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 116-4340-006.0201 | Xenon beacon | • | | • | | | | | • | – | | IP55 | |
|  | 116-4340-006.0924 | Solex beacon, shallow base | • | | • | | | • | | • | – | 2,5 c | IP54 | |
|  | 116-4340-006.0925 | Solex beacon, deep base | • | | • | | | • | | • | – | 2,5 c | IP54 | |
|  | 116-4340-006.0926 | Solex beacon, shallow base | • | | • | | | • | | • | – | 2,5 c | IP54 | |
|  | 116-4340-007.0001 | Solista LX beacon, wall mounted , deep base | • | | • | • | | • | | • | – | W-2.4-7.5 | IP65 | Red flash |
|  | 116-4340-007.0002 | Solista LX beacon, ceiling mounted, shallow base | • | | • | • | • | | | • | – | C-3-7.5 | IP33C | Red flash |

| Image | Part number | Description | Alarm output mounting | Loop mounting | Electronic | Signal presets | Configurable | Watertight | Sound | Light | Sound output (dBA/1 m) | Light output (Candela/Joule) | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 116-4340-007.0007 | Solista LX wall, shallow base | • | | • | • | • | | | • | – | C-3-7.5 | IP33C | Red flash |
| | 116-4340-007.0008 | Symphony G1 LX, wall | • | | • | • | • | | | • | 100 | W-2.4-7.5 | IP21C | Red flash |
| | 116-4340-007.0009 | Symphony G1 LX, wall | • | | • | • | • | | | • | 100 | W-2.4-7.5 | IP21C | Red flash |
| | 116-7770-009.0002 | Roshni LP, shallow base | • | | • | • | | • | • | | 102 | – | IP54 | |
| | 116-7770-009.0004 | Roshni LP, shallow base | • | | • | • | | • | • | | 102 | – | IP54 | |
| | 116-4340-007.0005 | Symphoni LX WP conventional base beacon, wall mounted | • | | • | • | • | • | | • | – | W-2.4-7.5 | IP66 | Red flash |
| | 116-7770-009.0040 | Symphoni IP66 | | | | | | | • | | 100 | - | IP66 | For use with 116-4340-007.0005 |

| Image | Part number | Description | Alarm output mounting | Loop mounting | Electronic | Signal presets | Configurable | Watertight | Sound | Light | Sound output (dBA/1 m) | Light output (Candela/Joule) | Ingress Protection level | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | 116-7770-009.0005 | Roshni, deep base | • | | • | • | | • | • | | 102 | – | IP65 | |
|  | 116-7780-004.0001 | Flashni, shallow base | • | | • | | | • | | • | 101 | 0,7 j | IP54 | |
|  | 116-7780-004.0002 | Flashni, deep base | • | | • | | | • | • | • | 101 | 0,7 j | IP65 | |
|  | 116-7780-005.2301 | Sounder and beacon AL112 | • | | • | • | | | • | • | 112 | 5 j | IP55 | |
|  | 116-7780-005.2401 | Sounder and beacon AL121 | • | | • | • | | | • | • | 121 | 5 j | IP55 | |
|  | 116-7780-006. | Air typhoon | • | | | | | • | • | | 141 | – | IP65 | 0.6-1.0 Mpa |
| | 116-7780-006.0002 | Air typhoon | • | | | | | • | • | | 141 | – | IP65 | 2.5-3.0 Mpa |

## Accessories for loop units

| Image | Part number | Description |
| --- | --- | --- |
| | 116-BWA-100 | Detector base for AuroSafe detectors |
| | 116-BWB-110 | Base adapter for analogue addressable detectors mounted on interactive loops |
| | 116-BWP-100/20 | Drip proof conduit box with M20 glands |
| | 116-BWP-100/20/PG16 | Drip proof conduit box with M20 glands (PG16) |
| | 116-BWP-100/25 | Drip proof conduit box with holes for M25 glands |
| – | 116-WBJ-140 | Mounting/demounting tool for AutroSafe detectors mounted on base BWA-100 |
| – | 116-WBW-100 | Bypass unit for BWA-100 |
| – | 116-WBW-101 | Mounting plate for false ceilings |
| | 116-BZ-500 | Galvanic barrier for Exia approved detectors.<br>If power to the unit is supplied from the panel, a 24 V DC/DC converter, e.g. 116-4660-055.0001 (page 21) must be used to regulate the power. |
| | 116-UL-050 | Robust bracket for manual call points |
| – | 116-CXBZ | Bezel for manual call points. Only for 116-BF-300V2. |
| – | 116-4860-011.0100 | Polycarbonate cover for manual call point BF-300V2 |
| – | 116-4860-011.9901 | Test key for manual call point 116-BF-300V2 (10 pack). |

| Image | Part number | Description |
|---|---|---|
| – | 116-4890-021.0001 | Lift flap in polycarbonate for manual call point 116-BF-502, all versions |
| – | 116-4890-021.0010 | Lift flap in stainless steel for manual call point 116-BF-502, all versions |
| – | 116-4890-022.0001 | Lift flap in polycarbonate for manual call point 116-BF-501, all versions |
| – | 116-4890-022.0010 | Lift flap in stainless steel for manual call point 116-BF-501, all versions |
| – | 116-6550-125.0075 | Spacer for open installation of base sounder BBR-110 |
| – | 116-6571-011.1920 | Cable gland M20-1.5 for Ingress Protection level IP67 for I/O units. NB! Order with 116-6531-006.1920 |
| – | 116-6531-006.1920 | Backnut for cable gland IP67. NB! Order with 116-6571-011.1920 |
| – | 116-BW-240 | Deep mounting plate for base sounders BBR-130 and BBQ-130 |
| – | 116-7770-009.0008 | Power base 230 V for Roshni |

# **Flame** detection

**Keeping a close watch**

Autronica's flame detectors are solutions for applications in which risk to personnel is high and where fire might result in a large loss of equipment. Beyond critical life-safety concerns, our products have proven to minimize total cost of ownership while minimizing false alarms.

Our maritime applications include engine rooms, mooring decks and other technical areas where there is risk of flames.

Bottom line – Autronica offers flame-detection technologies with wide area coverage, high false-alarm immunity, reduced response times, and the appropriate global approvals. And to improve ease of use, all X-Series flame detectors have HART-protocol options.

## Flame detectors

The AutroFlame IR Flame Detector BG-201 and BG-21 is a point flame detector for detection of fires involving combustion of carbonaceous materials. It has a high IP rating making it suitable for the harshest environments.

The dual IR flame detector is used in various applications in which risk to personnel is high and where fire might result in a large loss of equipment. Beyond critical life-safety concerns, the advanced signal processing and DYFI+ intelligence ensure that the detector has a high immunity to any nuisance alarm source and makes this detector the obvious choice for demanding applications.

All AutroFlame X detectors have 4 x M25 cable entries. Swivel mount, glands and blind plugs are not included.
All AutroFlame X detectors have an ambient temperature range of -55 °C to + 60 °C for T6 and -55 °C to + 75 °C for T5.
For interfacing AutroFlame X detectors to AutroSafe, use 116-BN-304.

| Image | Part number | Description | Housing | Ingress Protection level | Notes |
|---|---|---|---|---|---|
| | 116-BG-201 | AutroFlame Dual IR interactive | PCB | IP66/67 | |
| | 116-BG-201MRK | AutroFlame Dual IR interactive | PCB | IP66/67 | Maritime replacement kit for 601F-M, including detector and mounting plate |
| | 116-BG-21 | AutroFlame Dual IR conventional | PCB | IP66/67 | |
| | 116-5861-011.4310 | AutroFlame X33AF multispectrum IR | SS | IP66 | Available with HART protocol on request (X3301S4M23W1) Combination unit with camera available |
| | 116-5861-011.4320 | AutroFlame X33AF multispectrum IR | Alu | IP66 | Available with HART protocol on request (X3301S4M23W1) Combination unit with camera available |
| | 116-5861-011.4340 | AutroFlame X33AF multispectrum IR | SS | IP66 | For areas with high temperatures |
| | 116-5861-011.4360 | AutroFlame X33AF multispectrum IR | Alu | IP66 | For areas with high temperatures |
| | 116-5861-011.4341 | AutroFlame X33AF multispectrum IR | SS | IP66 | Built-in BNB-300 |
| | 116-5861-011.4361 | AutroFlame X33AF multispectrum IR | Alu | IP66 | Built-in BNB-300 |
| | 116-5861-011.3980 | AutroFlame X98 single IR | SS | IP66 | |
| | 116-5861-011.3981 | AutroFlame X98 single IR | Alu | IP66 | |
| | 116-5861-010.2010 | 601FEX-M IR | FR110 | IP20 | Ambient temperature range: -20 °C – +70 °C |

## Accessories

| Part number | Description |
|---|---|
| 116-UL-046 | Mounting bracket for BG-21 and BG-201 |
| 116-6571-071.2500 | Cable gland M25, polyamid, Eexe, Ingress Protection level: IP67 |
| 116-6332-032.1925 | Blind plug M25, polyamid, Eexe, Ingress Protection level: IP67 |
| 116-6571-016.2520 | Cable gland adapter M20/M25 |
| 116-6530-030.0020 | Blind plug M20, brass, nickel plated. Exd/Exe, Ingress Protection level: IP66/68 |
| 116-6530-030.0025 | Blind plug M25, brass, nickel plated. Exd/Exe, Ingress Protection level: IP66/68 |
| 116-001680-001 | K1003A1006 Window cleaner for flame detectors (6 pcs.) |
| 116-5861-011.9050 | Q9033B Swivel mount for AutroFlame detectors, stainless steel |
| 116-5861-011.9051 | Q9033A Swivel mount for AutroFlame detectors, aluminium |
| 116-007338-010 | Q2033A10R 10 degree field-of-view limiter |
| 116-007338-020 | Q2033A20R 20 degree field-of-view limiter |
| 116-007338-030 | Q2033A30R 30 degree field-of-view limiter/Weather shield (maintains standard field of view) |
| 116-007240-001 | Q1116A air shield assembly |
| 116-009199-001 | Q1198A dual air shield/flange mount assembly |
| 116-5861-010.2013 | Ex detector base for 601FEX-M |
| 116-5861-010.2014 | Deckhead mounting kit for series 601 |

## Test/measuring equipment

| Image | Part number | Description |
|---|---|---|
|  | 116-006439-004 | W8067S1003 Test lamp IR/UVIR |
|  | 116-102740-002 | Test magnet for AutroFlame X33AF |
|  | 116-WBJ-5/01 | Test gas dispenser for smoke detectors, excluding pole |
|  | 116-WBJ-5/02 | Telescopic pole, 1,26 m – 4,5 m. 1,8 kg |
|  | 116-WBJ-5/03 | Expansion pole, 1,13 m. 0,5 kg |

| Image | Part number | Description |
|---|---|---|
|  | 116-WBJ-5/04 | Test gas for smoke detectors |
| – | 116-WBJ-5/05 | Telescopic pole 2-S, 1.26-2.5 m |
|  | 116-WBJ-6/01 | Heat detector test kit, including 2 x batteries and charger |
| – | 116-WBJ-10 | Testifire smoke/heat detector test kit (head unit 2 x battery baton and fast charger) |
|  | 116-WBJ-10/01 | Testifire smoke/heat head unit |
|  | 116-WBJ-10/02 | Smoke capsule for WBJ-10 (6 pack) |
|  | 116-WBJ-10/03 | Solo 760 battery baton |
|  | 116-WBJ-10/04 | Solo 725 universal fast battery charger |
| – | 116-3400-004. | Smoke pump (type: Bee Keeper) |

Easy to use,
provides full overview
and saves valuable time

# **AutroMaster** presentation system

**A fully integrated safety and emergency management system**

AutroMaster ISEMS is an Integrated Safety and Emergency Management System combining the strengths of a powerful fire detection system with control and monitoring functions dedicated to make sure you are in control in case of an emergency.

### Graphical user interface
The AutroMaster provides an intuitive control and monitoring interface built to save valuable time when every second counts. Status information is displayed in real-time with easy-to-understand graphical representation. Navigation is fast and instinctual and the powerful zoom functions allow you to monitor all areas in great detail. AutroMaster displays values for gas density, smoke and heat in dynamic colours, making it easy to perform the necessary actions during emergencies.

### Interoperability
Control and monitoring of third party systems can easily be performed via serial protocols or network interfaces. They provide connection to basically any source – network time servers, telephone systems for text messaging,

public address systems for automated voice messaging, emergency lights, access control systems, CCTV, automation systems and so on.

### Logging and reporting
The AutroMaster keeps track of all events in the system and has a built-in report generator. This provides a cost-effective system log for maintenance and documentation purposes.

### Decision-making tools
In high-risk environments around the world, a seemingly innocuous fire can quickly escalate into an emergency of large proportions. When disaster strikes and you only have seconds to make the proper decisions, the right safety and emergency management system is an invaluable asset. The AutroMaster includes a Decision Support System (DSS) that will help you make the right decisions at the right time.

**AutroMaster editions**

AutroMaster ISEMS is the complete AutroMaster edition, including all functionality. In addition, we offer a market specific edition with the modules most relevant for the maritime market

| Modules/functions | AutroMaster - maritime edition | AutroMaster - ISEMS |
|---|:---:|:---:|
| **Basic functionality** | | |
| Fire management basic functions | • | • |
| MultiSensor control | • | • |
| Report generator | • | • |
| Control and monitoring of emergency lights/LLL | • | • |
| **Extended functionality** | | |
| AutroSafe IFG unit support | NA | • |
| Touch screen support | • | • |
| Decision support system/incident manager | | • |
| Electronic plotting table | | • |
| Training/simulation module | | • |
| Event record and replay module | | • |
| Video module (live video support CCTV) | | • |
| Remote connect function | | • |
| Message Centre module | | • |
| **Interfaces** | | |
| Hernis CCTV interface | | • |
| System-S interface | | • |
| NMEA interface | | • |
| VDR output | • | • |
| MODBUS interface | • | • |
| ESPA 4.4.4 interface | • | • |

## Software licences

| Part number | Description |
|---|---|
| 116-PROG-AUTROMASTER-MAR | AutroMaster Maritime Edition – For the maritime market the AutroMaster Maritime Edition is specially designed to meet the IMO/SOLAS requirements and regulatory demands. |
| 116-PROG-AUTROMASTERISEMS | AutroMaster ISEMS – Provides the full range of functionality – every possible add-on module is included in this package, making it the perfect choice for demanding applications and professional customers. |
| 116-PROG-AM-UPGRADE | Upgrade of AutroMaster to most recent version – Existing AutroMaster customers can upgrade their license to the most recent version of AutroMaster. Requires change of AutroMaster configuration data. |

## Software modules

| Part number | Description |
|---|---|
| 116-PROG-AM-MOD-DSS | Decision Support System (DSS) – An interactive incident management system for AutroMaster. The DSS gives operators access to customer-specified checklists. The checklists are organized as checkpoints with one or more action items that can be used to manage operations, and these can be marked off as actions are completed. |
| 116-PROG-AM-MOD-EPTABLE | Electronic fire control plotting table – gives you a dynamic plotting table to keep track of actors events during an emergency or drill. All EPT activity is logged in the Decision Support System and is available for later reviews. |
| 116-PROG-AM-MOD-TSIM | Training/Simulation module – A tool to simulate pre-configured events. During a simulation it is possible to pause, stop/end, and continue the simulation. Running the simulation tool is similar to running a live event, alarms and faults are acknowledgeable and resettable. Every event is logged, and after a simulation (or a stop), a full log can created and it is possible to replay the simulation using the Event record/replay module. |
| 116-PROG-AM-MOD-EVENT | Event Record/Replay module – Offers a screenshot-based replay of incidents on AutroMaster and can be configured to start recording manually or on pre-configured events as pre-warning, alarm or simulation. Recordings are available for replay, and under replay the operator can start, stop, pause, fast-forward and fast backwards. It is possible to export stored events. |
| 116-PROG-AM-MOD-VIDEO | Video interface module – Includes display of live video in AutroMaster from IP based video cameras. |
| 116-PROG-AM-MOD-REMOTE | Remote Connect function – The Remote Connect Module enables a remote connection to AutroMaster from any location using a server/client technology. |
| 116-PROG-AM-MOD-MC | Message Centre module – In the Message Centre the user can send text messages to telephone systems and other AutroMaster PCs. The user can also send pre-recorded voice messages to PA systems. Requires ESPA 4.4.4. interface. |

## Interface modules

| Part number | Description |
| --- | --- |
| 116-PROG-AM-MOD-HERNIS | Hernis CCTV interface – Interface enables use of AutroMaster together with video cameras and servers from Hernis. |
| 116-PROG-AM-MOD-NMEA | NMEA interface – A protocol used for interface in between maritime electronic equipment, and AutroMaster has built-in support for this in the NMEA interface module. Interface towards GPS is the most common application. |
| 116-PROG-AM-MOD-VDROUTPUT | VDR output – Used in maritime applications for giving output to the Voyage Data Recorder. Configuration of which data and status messages to send to the VDR is done by project engineering. |
| 116-PROG-AM-MOD-MODBUS | MODBUS interface – With the MODBUS interface AutroMaster can be connected to almost any kind of electronic equipment for monitoring and control. |
| 116-PROG-AM-MOD-ESPA444 | ESPA 4.4.4 interface – Offers a serial protocol intended for the interconnection of paging equipment with telephone exchanges or computer systems. The protocol used is message-based and is built upon the ISO1745 transport specification. Required if Message Centre module is used. |

## Software hardcopies

| Part number | Description |
| --- | --- |
| 116-AUTROMASTER-MAR-CD | AutroMaster MAR back-up CD without license |
| 116-AUTROMASTERISEMS-CD | AutroMaster ISEMS back-up CD without license |

## Engineering/Configuration

| Part number | Description |
| --- | --- |
| 116-AM-CONFIG | General configuration work on setup of AutroMaster |
| 116-AM-CHANGE | Change of AutroMaster configuration |
| 116-PROSJAMB | Conversion of drawings into AutroMaster format |
| 116-PROSJAMD | Adding of detectors to drawings |
| 116-PROSJAMDF | Adding of color fill for analog values |

## Hardware

| Part number | Description |
| --- | --- |
| 116-AUTROMASTER-PC-12M | PC, maritime standard. Model subject to change without prior notice. |
| 116-AUTROMASTER-RACKPC | 19" rack mount PC |
| 116-5151-017.0020 | PC12M rack mounting kit |
| 116-5151-017.0021 | PC12M horizontal mounting kit |
| 116-5151-017.0022 | PC12M vertical mounting kit |
| 116-5151-020.0210 | Industrial PC w/SSD |
| 116-5151-020.1951 | 19" standard LCD monitor |
| 116-5151-200.1027 | 20" console mounted monitor, DuraMON |
| 116-5151-020.2405 | 24" widescreen LCD monitor |
| 116-5151-019.1027 | DuraMON WS bracket standard |
| 116-5760-050.2003 | Laser printer, colour, network and USB |
| 116-5151-200.0023 | 20" monitor, console mounted, JH20T17 MMD |
| 116-5151-017.0004 | Keyboard/mouse Nordic character set |
| 116-5151-017.0002 | Keyboard - UK/English character set |
| 116-5151-020.0400 | Mouse - USB - 3 buttons |
| 116-5151-020.0732 | Network card TG-3468 10/100/1000 |
| 116-5151-020.2027 | Exsys 4-port serial EX-41094 |
| 116-5151-020.2029 | Moxa 4-port serial PCIE |

Premium quality
safety monitoring and
environmental surveillance

# **Omicron** systems

**Solutions you can trust**

Every day, thousands of vessels navigate the world's oceans, containing valuable and often high-risk products. We are dedicated to the crew onboard, always doing our best to ensure that they have the safest working conditions possible.

Each application is unique in design or task, and it is our mission to provide each one with an optimal safety system. Autronica's Omicron product range is designed to meet the most demanding requirements within the maritime industry. For more than 25 years we have designed high level/overfill alarm systems, gas detection systems and vapour alarm systems to meet and exceed the individual demands of each vessel. The entire value chain from project engineering via production to after sales and administration is bundled in our Special Detection Competence Center in

Norway, ensuring fast, efficient and high quality project realization. Based on the experience of approximately 200 projects per year and our thorough application know-how our team of dedicated and highly specialized employees will always find the ideal solution for your needs.

Since 1989 we have developed and optimized a range of high end systems that require minimal maintenance, are extremely robust and reliable as well as easy to operate. Our service-friendly systems fulfill all regulatory and class societies' regulations and enable economically viable operations. Omicron systems can be used onboard high complexity vessels like LNG, LPG, FPSO, FSRU or similar, as well as on more standardized crude oil or chemical tankers.

## Level alarm system – OAS 5.5

### Independent high level and overfill monitoring system

Our high level / overfill alarm system is the classical product in the Omicron range. Ever since the first system was delivered in 1989 we have continuously improved and optimized the system to the robust, market leading design of today. The OAS 5 is designed to monitor all pumpable liquid cargo types as an independent alarm system as required by IMO's "International Code for Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk" (IBC Code) as well as classification societies rules for chemical, oil product and gas carriers.

Each system is specified in line with the individual customer's needs and contains a monitoring cabinet and a sensing element, optimized for the various cargo types and able to withstand the most demanding maritime conditions.

**Features:**

- Preconfigured 1 to 3 alarm level thresholds
- Suitable for all pumpable liquid cargo types
- Resistant to tank cleaning machines
- Application specific sensor types, e.g. LNG / LPG
- Same alarm point for different cargo densities
- Alarm hold function, avoiding repeating alarms from same sensor
- Fail safe, fully encapsulated design
- Intrinsically safe connections to sensors
- Mechanically and electrically separated high level and overfill alarms
- No active electronic components in the open deck area
- Alarm panel in electronic cabinet or remote
- Connectable to external alarm / control system
- Manual sensor / system test functionality
- Continuous system verification
- At sea mode, adjusting for ship movements (Optional)
- Remote control with control transfer (Optional)

| Part number | Name | Description |
|---|---|---|
| 116-KIT-K1001 | Level alarm system OAS 5.5/A | Control cabinet for single level sensor system with intrinsically safe alarm module and integrated alarm panel. Cabinet to be operated in indoor safe area. |
| 116-KIT-K1025 | Level alarm system OAS 5.5/B | Control cabinet for single level sensor system with intrinsically safe alarm module and use with remote alarm panel. Cabinet to be operated in indoor safe area. |
| 116-KIT-K1050 | Level alarm system OAS 5.5/C | Control cabinet for dual/triple level sensor system with fully independent intrinsically safe alarm modules and integrated alarm panel. Cabinet to be operated in indoor safe area. |
| 116-KIT-K1075 | Level alarm system OAS 5.5/D | Control cabinet for dual/triple level sensor system with fully independent intrinsically safe alarm modules and use with remote alarm panel. Cabinet to be operated in indoor safe area. |

### OAS 5.5 classification

| Part number | Name | Description |
|---|---|---|
| 116-Classification | Classification by class society | |

## OAS 5.5 sensor elements

| Part number | Name | Description |
| --- | --- | --- |
| 116-KIT-K1501 | Level sensor single HL 8903 | Standard single level sensor with intrinsically safe electrical circuit |
| 116-KIT-K1510 | Level sensor dual HHL 8903 | Standard dual level sensor with fully indendent, intrinsically safe electrical circuits |
| 116-KIT-K1520 | Level sensor single HL 8903LPG | Single level sensor for LPG with intrinsically safe electrical circuit |
| 116-KIT-K1530 | Level sensor dual HHL 8903LPG | Dual level sensor for LPG with fully independent, intrinsically safe electrical circuits |
| 116-KIT-K1535 | Level sensor triple HHL 8903LPG | Triple level sensor for LPG with fully independent, intrinsically safe electrical circuits |
| 116-KIT-K1540 | Level sensor single LNG HL8903A | Single level sensor for LNG with intrinsically safe electrical circuit |
| 116-KIT-K1550 | Level sensor dual LNG HHL8903A | Dual level sensor for LNG with fully independent, intrinsically safe electrical circuits |
| 116-KIT-K1560 | Level sensor triple LNG HHL8903A | Triple level sensor for LNG with fully independent, intrinsically safe electrical circuits |

## OAS 5.5 system options

| Part number | Name | Description |
| --- | --- | --- |
| 116-M1630 | Modbus OAS 5 | |
| 116-M1636 | At sea mode A/C | At sea mode module for use with control cabinets with integrated alarm panels. Blocking of high level and 45s delay of overfill alarm |
| 116-M1637 | At sea mode B/D | At sea mode module for use with control cabinets operated with remote alarm panels. Blocking of high level and 45s delay of overfill alarm |
| 116-M1635 | At sea mode separate | Standalone at sea mode. Blocking of high level and 45s delay of overfill alarm |
| 116-M1638 | Override function A/C | Override function to block alarms e.g. during maintanance for use with cabinets with integrated alarm panels |
| 116-M1639 | Override function B/D | Override function to block alarms e.g. during maintanance for use with cabinets with remote alarm panels |
| 116-M1641 | Test function B/D | Alarm and inidicator test functionality for cabinets with remote alarm panels |
| 116-M1643 | Indication function B/D | Alarm indication interface to third party equipment for use with control cabinets with remote alarm panels |
| 116-M1644 | Relay output common 2 pole | |
| 116-M1645 | Relay output common 1 pole | |
| 116-M1646 | Relay output individual 2 pole | |
| 116-M1647 | relay output individual 1 pole | |
| 116-11292 | Omicron flange JIS5K100/DN80 | DN80 JIS5K100 SS flange including sensor pole junction box with M25 thread |

| Part number | Name | Description |
|---|---|---|
| 116-14281 | Bl. flange ANSI 3"/150LBS RF SS | ANSI 3"/150LBS excluding sensor pole junction box |
| 116-14216 | Bl. flange ANSI 3"/300LBS RF SS | ANSI 3"/300LBS excluding sensor pole junction box |
| 116-14270 | Bl. flange DN100/PN25 RF SS | DN100/PN25 excluding sensor pole junction box |
| 116-14213 | Bl. flange ANSI 4"/150LBS RF SS | ANSI 4"/150LBS excluding sensor pole junction box |
| 116-14214 | Bl. flange ANSI 4"/300LBS RF SS | ANSI 4"/300LBS excluding sensor pole junction box |
| 116-14277 | Bl. flange JIS 10K100A SS | JIS10K100A SS flange, excluding sensor pole junction box |
| 116-M1138 | Sensor pole junction box with 1" thread | |
| 116-M1139 | Sensor pole junction box with 3/4" thread | |
| 116-M1140 | Sensor pole junction box with M25" thread | |

## OAS 5.5 accessories

| Part number | Name | Description |
|---|---|---|
| 116-33060 | Tank overfill alarm sign | |
| 116-33070 | Tank high level alarm sign | |
| 116-M1110 | Flexible hose 3/4"- JIS5K40 SS | 500 mm flexible adaptor hose with JIS5K40 SS flange, 3/4" NPT threads, Cable gland M25 brass to connect OAS wiring up to 14mm to deck flange |
| 116-M1111 | Flexible hose 3/4"- JIS5K40 ST | 500 mm flexible adaptor hose with JIS5K40 ST flange, 3/4" NPT threads, Cable gland M25 brass to connect OAS wiring to deck flange |
| 116-M1112 | Flexible hose 1"- JIS5K40, 600 mm | 600 mm flexible adaptor hose with JIS5K40 SS flange, 1" NPT threads, Cable gland M32 brass to connect OAS wiring to deck flange |
| 116-M1116 | Flexible hose 3/4"- JIS5K50 ST | 500 mm flexible adaptor hose with JIS5K50 ST flange, 3/4" NPT threads, Cable gland M25 brass to connect OAS wiring to deck flange |
| 116-M1117 | Flexible hose 1"- JIS5K50, 600 mm | 600 mm flexible adaptor hose with JIS5K50 SS flange, 1" NPT threads, Cable gland M32 brass to connect OAS wiring to deck flange |

## OAS 5.5 spare part kits

| Part number | Name |
| --- | --- |
| 116-M6101 | Spare part set OAS 5.5 standard |
| 116-M6102 | Spare part set OAS 5.5 3 years |
| 116-M6104 | Spare part set OAS 5.5 5 years |
| 116-M6150 | Spare HL sensor standard |
| 116-M6152 | Spare HL sensor standard, 5 years |
| 116-M6153 | Spare HL sensor High temp |
| 116-M6156 | Spare HL sensor LPG |
| 116-M6159 | Spare HL+DT sensor LPG |
| 116-M6161 | Spare HL+DT sensor LPG, 5 years |
| 116-M6162 | Spare HL sensor LNG |
| 116-M6164 | Spare HL sensor LNG, 5 years |

## Vapour alarm system – OVS 2.1

### For vapour return lines on tankers

Today's OVS 2.1 comes factory assembled, calibrated and tested according to agreed customer specifications, ready to be installed and commissioned without special tools required. The intuitive and well-structured operation panel ensures ease of use and limited training requirements.

The system consists of a detector cabinet mounted on deck with Eex ia approved oxygen and pressure sensors, flow fail indicator, manifold selector, test and purge facility as well as an electronic cabinet mounted in the cargo control room containing the alarm panel, with individual alarm displays and status LEDs. Different models are available to cover all configurations of manifolds and vapour lines.

The system is designed to meet IMO's "International Code for Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk" (IBC Code) requirements as well as all classification society rules.

**Features**

- Factory assembled , calibrated and tested according to agreed customer specification
- Compatible with all types of manifolds and vapour lines
- Intuitive Operation
- Customer adjustable oxygen, low and high pressure alarm levels
- Four configurable alarm settings for each sensor
- Multiple pressure sensors / vapour sample lines
- Continuous flow and system watch dog
- No special tools required for installation and commissioning
- Alarm panel separate from electrical control cabinet (optional)
- Remote alarm unit to display alarms on a second location e.g. ship's bridge (optional)
- RS 485/422 Modbus RTU serial line communication (optional)

| Part number | Name | Description |
|---|---|---|
| 116-KIT-K4001 | Vapour alarm system OVS 2.1 OP/A AL | Alarm cabinet with integrated alarm panel including intrinsically safe EX bariers for communication with the detector cabinet. Cabinet to be operated in indoor safe area. |
| 116-KIT-K4010 | Vapour alarm system OVS 2.1 OP/B AL | Alarm cabinet with remote alarm panel including intrinsically safe EX bariers for communication with the detector cabinet. Cabinet and alarm panel to be operated in indoor safe area. |
| 116-KIT-K4020 | Vapour alarm system OVS 2.1 OP/ DET | Ex approved detector cabinet for oxygen and pressure monitoring |

### OVS 2.1 classification

| Part number | Name | Description |
|---|---|---|
| 116-Classification | Classification by class society | |

## Point gas detection system – OGS 2.1

### For cargo rooms, AC inlets, crankcases and other applications

Our point gas detection system OGS 2.1 is the ideal solution for environments that require continuous monitoring for hazardous gases.

Typical higher risk areas that require fixed point gas detection are e.g. pump rooms and engine rooms. The system can be equipped with an infinite number of sensors and supports various detection methods such as e.g. electrochemical, catalytical and infrared technology.

The OGS 2.1 system operates on the same platform as our gas sampling family OGS 3, making it easy combinable and the ideal extension to the OGS sampling systems whenever both solutions need to be pooled to one economically sound system. The platform flexibility enables us to meet the individual customer's needs.

The OGS 2.1 meets the requirement set out by IMO and the different classification societies.

**Features**

- Individual readings and alarm LEDs for each individual sensor
- Up to 4 adjustable independent alarm set points
- Detection of Oxygen, Hydrocarbons and toxic gases
- Infrared, catalytical and electrochemical sensors
- Continuous system verification
- Intuitive operation
- Remote alarm unit to display alarms on a second location e.g. ship's bridge (optional)
- Integrated temperature alarm for cargo pump bearings (optional)
- Cargo pump emergency shutdown (option)
- RS 485/422 Modbus RTU serial line communication (option)
- Separated alarm and detector cabinet (optional)

| Part number | Name | Description |
|---|---|---|
| 116-KIT-K2001 | Gas alarm system OGS 2.1 | Control cabinet with integrated alarm panel for a fixed gas detection system with a set number of sensors. Cabinet to be operated in indoor safe area. Standard Autronica project documentation included. <br><br> Number of sensors must be specified when ordering. |

### OGS 2.1 classification

| Part number | Name | Description |
|---|---|---|
| 116-Classification | Classification by class society | |

## OGS 2.1 Gas sensors & accessories

| Part number | Name | Description |
|---|---|---|
| 116-010195-058 | AutroPoint HC200 | IR Sensor 0 - 100% LEL, 2 x M25 cable entries |
| 116-009480-004 | GT3000 transmitter | Electrochemical, stainless steel housing, Eex d certified |
| 116-009471-032 | GT3000 sensor module H2S 0-50 ppm | |
| 116-009471-010 | GT3000 sensor module CO 0-100 ppm | |
| 116-009471-008 | GT3000 sensor module H2 0-1000 ppm | |
| 116-009471-009 | GT3000 sensor module O2 0-25% vol | |
| 116-75777 | GT3000 junction box | |
| 116-14382 | Cable gland M20 for GT3000 junction box | |
| 116-M2050 | Modbus OGS 2.1 | |

Other sensors on request. Custumor specific configuration and documentation on request

## OGS 2.1 spare part kits

| Part number | Name |
|---|---|
| 116-M6170 | OGS 2.1 standard spare part kit |
| 116-M6171 | OGS 2.1 3 years spare part kit |

## Gas sampling systems – OGS 3.1 / OGS 3.11

### For total solutions in gas sampling

The OGS 3 family is our 4th generation gas sampling system, relied on by major operators around the world. Built to withstand the harshest conditions the Omicron Gas Sampling Systems are the ideal solution for gas detection in areas where normal installation of gas sensors is impossible.

Our OGS 3 family consists of two different gas sampling systems; The OGS 3.11 is the ideal gas sampling system for all typical marine applications. Based on our more than 20 years of experience we have optimized the system to meet the demanding maritime conditions and to become the all-round solution for monitoring the air content in e.g. water ballast tanks, pump rooms or void spaces in the cargo area.

The OGS 3.1 is our top of the range gas sampling system and typically used for larger installations. The system contains a monitoring cabinet and a detector cabinet which increases its scalability. It enables us to design the ideal solution for the individual operational challanges on e.g. FPSOs or FLNGs.

Both systems meet the requirement set out by IMO and the different classification societies.

**Intuitive and efficient**

Within standard operation the OGS system runs a fully automated sampling sequence from the various defined sampling points. The cycle time is minimized by using 2 independent vacuum pumps; one main pump that continuously draws air from all sample points and one smaller pump taking samples from the actual point according to the sample sequence. This ensures fresh samples and a quick response in case gas is detected. The system continuously self verifies all pneumatic components to ensure proper operation at all times. All alarms, gas as well as potential malfunctions, are shown on the standardized Omicron operator panel in plain text, making the operation extremely intuitive and limiting training requirements, especially for combined systems.

**Scalability**

The wide range of optional features in conjunction with the overall system flexibility allow Omicron Gas Sampling Systems to cover a brought range of applications, ranging from a system with only a few sample points to a tailor made OGS 3.1 system with a centralized monitoring cabinet and several detector cabinets, making it the ideal solution for large and demanding applications.

Both systems – OGS 3.1 and OGS 3.11 – utilize the common Omicron product line platform, so that they can be easily combined with the Omicron fixed gas detection system OGS 2.1 creating an overall cost effective gas detection solution for an entire vessel.

**Features**

Standard
- Infrared hydrocarbon sensor(s) with range 0 - 100% LEL
- Low and high gas alarms
- Flame arrestor and shut off valves for each sampling tube
- Automatic and sequential purging of each sampling tube
- Two vacuum pumps for reliable detection (main and sample)
- Non-return valves to avoid liquid entering into the system
- Continuous system verification
- Adjustable purge and sample time on every sampling point
- Semi-automatic test functionality for span and zero calibration
- Manual disconnecting of sampling points that are not in use.

Optional
- Multiple gas analysis. Up to 3 different gas sensors simultaneously
- Dilute functionality for detection of non IR detectable combustible gases (e.g. NH3)
- Repeater display units with control transfer (max. 5)
- Remote alarm units with alarm LEDs and sounder (e.g. for bridge)
- Bulkhead penetrations
- RS 485/422 Modbus RTU serial line communication
- Up to 32 freely configurable aux. relay outputs
- Dual purge supply (i.e. nitrogen and instrument air)
- Standby pump with manual switch over
- Special design materials for extreme gases (OGS 3.1 only)

## OGS 3.11

| Part number | Name | Description |
|---|---|---|
| 116-KIT-K3501 | Gas sampling system OGS 3.11 | Gas sampling system existing of a combined alarm & control cabinet, including 1 AutroPoint HC200 0-100% LEL IR sensor configured for a set number of sample points. Cabinet is shielded by flame arrestors and to be operated in indoor safe area. Standard Autronica project documentation included.<br><br>Number sampling points must be specified when ordering. |

Customer specific configuration and documentation and/or other sensor types on request

## OGS 3.1

| Part number | Name | Description |
|---|---|---|
| 116-KIT-K3001 | OGS 3.1 Alarm & control cabinet | IP66 Control cabinet with integrated alarm panel for a set number of sample points. Cabinet to be operated in safe area. Standard Autronica project documentation included.<br><br>Number sampling points must be specified when ordering. |
| 116-KIT-K3010 | OGS 3.1 Detector cabinet | IP66 detector cabinet for safe arera incl. 1 AutroPoint HC200 0-100% LEL IR sensor, flame arrestors and manifolds for a set number of sample points. Cabinet to be operated in safe area. Standard Autronica project documentation included.<br><br>Number sampling points must be specified when ordering. |

Customer specific configuration and documentation and/or other sensor types on request

## OGS 3.1/3.11 classification

| Part number | Name | Description |
|---|---|---|
| 116-Classification | Classification by class society | |

## OGS 3.1/3.11 sensors and system options

| Part number | Name | Description |
|---|---|---|
| 116-009480-004 | GT3000 transmitter | |
| 116-009471-032 | GT3000 sensor module H2S 0-50PPM | |
| 116-009471-009 | GT3000 sensor module O2 0-25%VOL | |
| 116-M3252 | GT3000 flow cap | |
| 116-M3035 | Modbus OGS 3 | |
| 116-M3050 | Flamescreen OFS1/10MMOD | Flamescreen for exhaust air |

| Part number | Name | Description |
|---|---|---|
| 116-M3051 | FLAMESCREEN OFS1/12mmOD | Flamescreen for exhaust air |
| 116-M3078 | Shut-off valve 1X6MMOD EX HEX | |
| 116-M3079 | SShut-off valve 1X6MMOD W/HEX | |
| 116-M3080 | Shut-off valve 2X8MMOD | |
| 116-M3081 | Shut-off valve 1X8MMOD | |
| 116-M3082 | Shut-off valve 2X10MMOD | |
| 116-M3083 | Shut-off valve 1X10MMOD | |
| 116-M3084 | Shut-off valve 2X12MMOD | |
| 116-M3085 | Shut-off valve 1X12MMOD | |
| 116-M3140 | Filter regulator 12MMOD-12MMTX | |
| 116-M3141 | Filter regulator 10MMOD-12MMTX | |
| 116-M3142 | Filter regulator 8MMOD-12MMTX | |
| 116-M3060 | Bulkhead pen 150/32/ 2X8MM OD | |
| 116-M3061 | Bulkhead pen 150/32/ 1X8MM OD | |
| 116-M3062 | Bulkhead pen 150/32/ 2X10MM OD | |
| 116-M3063 | Bulkhead pen 150/32/ 1X10MM OD | |
| 116-M3064 | Bulkhead pen 150/32/2X12MMOD | |
| 116-M3065 | Bulkhead pen 150/32/1X12MMOD | |
| 116-M3066 | Bulkhead pen 150/22/2X8MMOD | |
| 116-M3067 | Bulkhead pen 150/22/ 1X8MM OD | |
| 116-M3068 | Bulkhead pen 150/22/2X10MMOD | |
| 116-M3069 | Bulkhead pen 150/22/1X10MMOD | |
| 116-M3070 | Bulkhead pen 150/22/2X12MMOD | |
| 116-M3071 | Bulkhead pen 150/22/1X12MMOD | |
| 116-M3122 | Non-return valve 8MM OD SS | |
| 116-M3123 | Non-return valve 10MM OD SS | |
| 116-M3105 | Inline filter 90MICRON/8MMOD | |
| 116-M3106 | Inline filter 90MICRON/10MMOD | |
| 116-M3110 | Endline filter 8MM OD | |
| 116-M3111 | Endline filter 10MM OD | |
| 116-75321 | Water trap | |

## OGS 3.1/3.11 spare part kits

| Part number | Name |
| --- | --- |
| 116-M6180 | OGS3.1 standard spare part kit |
| 116-M6181 | OGS3.1 3 years spare part kit |
| 116-M6182 | OGS3.1 5 year spare part kit |
| 116-M6183 | OGS3.1 standard spare part kit for LPG |
| 116-M6184 | OGS3.1 3 years spare part kit for LPG |
| 116-M6185 | OGS3.1 5 years spare part kit for LPG |
| 116-M6190 | OGS3.11 standard spare part kit |
| 116-M6191 | OGS3.11 3 years spare part kit |
| 116-M6192 | OGS3.11 5 year spare part kit |
| 116-M6193 | OGS3.11 standard spare part kit for LPG |

## Standard accessories for Omicron product range

### Bridge remote units

| Part number | Name | Description |
|---|---|---|
| 116-M6051 | Bridge remote unit box mounted | Remote alarm panel for use with OAS 5.5, OVS 2.1, and OGS systems |
| 116-M6050 | Bridge remote unit flush mounted | Remote alarm panel for use with OAS 5.5, OVS 2.1, and OGS systems |

### Alarm lights and horns

| Part number | Name | EX approval | Alarm sound frequency | Alarm colour | Sound output | Ingress Protection level | Voltage |
|---|---|---|---|---|---|---|---|
| 116-M6018 | Ex d Xenon alarm light BEXBG05 | II 2G Ex d IIC T4 | – | Red | – | IP66/67 | 24 V DC |
| 116-M6019 | Ex d Xenon alarm light BEXBG05 | II 2G Ex d IIC T4 | – | Amber | – | IP66/67 | 24 V DC |
| 116-M6020 | Ex d Xenon alarm light BEXBG05 | II 2G Ex d IIC T4 | – | Blue | – | IP66/67 | 24 V DC |
| 116-M6021 | Ex d Xenon alarm light BEXBG05 | II 2G Ex d IIC T4 | – | Red | – | IP66/67 | 230 V AC |
| 116-M6022 | Ex d Xenon alarm light BEXBG05 | II 2G Ex d IIC T4 | – | Amber | – | IP66/67 | 230 V AC |
| 116-M6023 | Ex d Xenon alarm light BEXBG05 | II 2G Ex d IIC T4 | – | Blue | – | IP66/67 | 230 V AC |
| 116-M6030 | Alarm horn KT75 M20 | – | Air driven 400 Hz | – | 136 dB(A) | IP65 | 24 V DC |
| 116-M6031 | Alarm horn KT75 M20 | – | Air driven 800 Hz | – | 136 dB(A) | IP65 | 24 V DC |
| 116-M6034 | Alarm horn A121 WR M20 | – | Electrical 1000 Hz | – | 126 dB(A) | IP66 | 24 V DC |
| 116-M6035 | Alarm horn A105 WR M20 | – | Electrical 1000 Hz | – | 112 dB(A) | IP66 | 24 V DC |
| 116-M6036 | Alarm horn A105 WR M20 | – | Electrical 1000 Hz | – | 112 dB(A) | IP66 | 230 V AC |
| 116-M6037 | Alarm horn MA121 WR M20 | – | Electrical 1000 Hz | – | 126 dB(A) | IP66/67 | 24 V DC |
| 116-M6038 | EX d Alarm horn | II 2G Ex d IIC T4 | – | | 117 bB(A) | IP66/67 | 24 V DC |
| 116-M6039 | EX d Alarm horn | II 2G Ex d IIC T4 | – | | 117 bB(A) | IP66/67 | 230 V AC |
| 116-M6040 | EX d Combination Alarm | II 2G Ex d IIB T4 | – | Red | 117 bB(A) | IP66/67 | 24 V DC |
| 116-M6041 | EX d Combination Alarm | II 2G Ex d IIB T4 | – | Amber | 117 bB(A) | IP66/67 | 24V DC |
| 116-M6042 | EX d Combination Alarm | II 2G Ex d IIB T4 | – | Red | 117 bB(A) | IP66/67 | 230V AC |

### Test gas

| Part number | Name | Description |
|---|---|---|
| 116-93019 | Hose 6mm PA | |
| 116-93626 | Quickc male 6mm open/open brass | |

| Part number | Name | Description |
| --- | --- | --- |
| 116-94008 | Reduction valve | AGA Pressure reducer for test gas w/flowmeter (0-800 ml/min ) |
| 116-81029 | Methane 50% LEL air 1l/12bar | |
| 116-81028 | Propane 50% LEL air 1l/12bar | |
| 116-96630 | N-Butane 50% LEL air 1l/12bar | |
| 116-81031 | H2S 25 ppm N2 1l/12bar | |
| 116-96635 | Nitrogen 1l/12bar | |
| 116-81024 | Test gas. N-Butane 50% L.E.L. in air 10L | |
| 116-94009 | Flow regulator for AGA 5L 10/l fixicontrol cylinder | |

# Calibration devices

**TEMPERATURE CALIBRATOR – OTE-T700**

The temperature calibrator is intended for testing of temperature sensors, indicators, switches and safety equipment. The heating medium is hot air. This makes it clean to use and it has quick temperature change response. Temperature range is about 10 degrees above ambient to + 700º C with digital readout of the measured temperature.

**Technical specifications:**
- Measuring range:      ~30 - 700º C
- Heating medium:      Air
- Display:      15 mm 3,5 Digit LCD.
- Dimensions:      410 x 140 x 160 mm.
- Weight:      4 kg
- Power:      120 V -  50/60 Hz - 2700 W, 230 V -  50/60 Hz - 2300 W
- Accuracy up to 100 ºC:      +/- 1 ºC, 101-400 ºC: +/- 1 % FS, 401-700 ºC: +/- 2 % FS

**PRESSURE CALIBRATOR – OTE-P202 AND OTE-P300**

The pressure calibrator is intended for testing of pressure sensors, indicators, switches and safety equipment. The pressure medium is oil. It has fine adjustment of the pressure, and an overpressure relief valve. The digital readout can be selected to Bar or PSI. Pressure range is 0 - 200 bar / 0 - 300 bar. The unit can also be delivered in Eex version.

**Technical specifications:**
- Measuring range:      0-200 Bar / 0-1999 PSI // 0-300 Bar 0-4350 PSI
- Pressure medium:      Oil
- Display:      15 mm 3,5 Digit LCD.
- Dimensions:      310 x 115 x 135 mm.
- Weight:      5 kg
- Hose length:      1,5 m with quick connector and 40 mm test cock
- Power:      1 pc. 9V battery
- Accuracy 0-10 Bar:      +/-  0.2 Bar
  - 11-200 Bar:       +/-  0.25 % F.s.
  - 11-300 Bar:       +/-  0.25 % F.s.

| Part number | Name |
|---|---|
| 116-M5020 | Temperature calibrator OTE-T700/230V |
| 116-M5030 | Pressure calibrator OTE-P202 |
| 116-M5040 | Pressure calibrator OTE-P300 |
| 116-M5050 | Pressure calibrator OTE-P300ex. Eex ia IIC T6 approved |

One supplier
– total fire safety

# Fire suppression systems

**– real-world safety solutions**

Integration of fire-safety equipment ensures that the correct response is made automatically; the integration of fire detection and suppression is a logical step. It can be difficult to get equipment made by two different suppliers to work together in a satisfactory way, and costs and installation time increase accordingly. That is why Autronica offers the total safety solution for maritime applications.

Autronica's fire suppression systems provide reliable, low-maintenance performance that distracts attention away from every-day activities as far as possible. They are hard-wearing enough to face the challenges of environments characterized by pollutants, corrosive chemicals and constant activity, as well as being sensitive enough to respond correctly in an emergency situation.

## Novec 1230 Fluid

**Novec™ 1230 Engineered Fire Suppression System is the new generation in gaseous fire suppression technology. Designed to protect human life and high value assets from fire, it meets the marine industry's concerns for safety, performance and the environment.**

Novec 1230 fluid is a fluorinated ketone that is stored as a liquid and discharged as a gas. It distributes uniformly throughout the hazard zone, and suppresses fire by a combination of heat absorption and chemical interference with the flame.

### Environment
With a zero ozone depletion potential (ODP), a global warming potential (GWP) of just one, and an atmospheric lifetime (ALT) of only 5 days, Novec 1230 fluid has no measurable impact on climate change. At the end of the lifetime of the system, the fluid can be readily recovered and recycled.

### Clean
Novec 1230 fluid discharges as a colourless, electrically non-conductive and noncorrosive gas that does not damage sensitive equipment. There is no post-discharge residue, no costly clean-up operations are required, and down-time is kept to a minimum.

### Cost-effective
By using its tried and trusted range of 25 bar equipment, Autronica can offer a cost-effective Novec 1230 fire suppression system.

### Efficient
Small and large-scale tests have proven that Novec 1230 fluid puts fires out quickly, before they can do any serious damage. It does this by reaching extinguishing concentrations in ten seconds or less. It is effective on a wide range of Class A, B and electrical fires.

### Safety
The US EPA Significant New Alternatives Program (SNAP) classifies Novec 1230 fluid as acceptable for use as a total flooding agent in occupied spaces. A low design concentration of 4 to 6% in combination with a high No Observable Adverse Effect Level (NOAEL) of 10% means it provides a safety margin of up to 100%. This is by far the largest safety margin of any clean agent currently available. In addition, there is no risk of human asphyxiation with Novec 1230 fluid since it does not act by oxygen depletion in the hazard zone.

### System design
The Autronica Engineered Fire Suppression System comprises Novec 1230 fluid stored in cylinders connected to distribution pipework and specially designed discharge nozzles.

Novec 1230 fluid is stored as a liquid in nitrogen-pressurised steel cylinders. This ensures minimal storage space and weight requirements compared to all other viable gaseous agents. It also enables refills to be transported in unpressurised cylinders without the restrictions on gaseous alternatives.

The range of cylinders, valves and related components has been specially selected for use with Novec 1230 fluid and has been subjected to stringent testing procedures. Flexibility, quality and reliability make the Novec 1230 range the world's finest in fire safety.

Engineered systems are designed using FM Global and UL verified software and guidelines, and offer optimum designs for the defined risks with reduced pipe sizes, unbalanced flows and common room and void protection possible.

### Applications
Novec 1230 systems are ideally suited to the protection of machinery spaces, cargo pump rooms, control and switchboard rooms in a wide range of vessel types.

## Cylinders and accessories

| Part number | Name | Description |
|---|---|---|
| 116-1-45-200040-001 | 16 l cylinder | Including 1.5'' valve assembly, mounting hardware, pressure operated control head and standard supervisory pressure switch. Cable operated control head and ATEX pressure swtich available on request. |
| 116-1-45-200070-001 | 28 l cylinder | Including 1.5'' valve assembly, mounting hardware, pressure operated control head and standard supervisory pressure switch. Cable operated control head and ATEX pressure swtich available on request. |
| 116-1-45-200125-001 | 51 l cylinder | Including 1.5'' valve assembly, mounting hardware, pressure operated control head and standard supervisory pressure switch. Cable operated control head and ATEX pressure swtich available on request. |
| 116-1-45-200200-001 | 81 l cylinder | Including 2'' valve assembly, mounting hardware, pressure operated control head and standard supervisory pressure switch. Cable operated control head and ATEX pressure swtich available on request. |
| 116-1-45-200350-001 | 142 l cylinder | Including 2'' valve assembly, mounting hardware, pressure operated control head and standard supervisory pressure switch. Cable operated control head and ATEX pressure swtich available on request. |
| 116-1-486488 | Container bracket for 28 l cylinder. | Also available for 16 l cylinder. |
| 116-1-878757 | Cylinder recharge adapter for cylinder size: 5 to 51 l | |
| 116-1-878758 | Cylinder recharge adapter for cylinder size: 81 to 142 l | |

## Nozzles

| Part number | Name | Description |
|---|---|---|
| 116-1-45-294713 | Nozzle 1/2" BSP 180°. | Brass. Available with different drill sizes. |
| 116-1-45-294714 | Nozzle 3/4" BSP 180°. | Brass. Available with different drill sizes. |
| 116-1-45-294715 | Nozzle 1" BSP 180°. | Brass. Available with different drill sizes. |
| 116-1-45-294716 | Nozzle 1 1/4" BSP 180°. | Brass. Available with different drill sizes. |
| 116-1-45-294717 | Nozzle 1 1/2" BSP 180°. | Brass. Available with different drill sizes. |
| 116-1-45-294718 | Nozzle 2" BSP 180° | Brass. Available with different drill sizes. |
| 116-1-45-294723 | Nozzle 1/2" BSP 360° | Brass. Available with different drill sizes. |
| 116-1-45-294724 | Nozzle 3/4" BSP 360° | Brass. Available with different drill sizes. |
| 116-1-45-294725 | Nozzle 1" BSP 360° | Brass. Available with different drill sizes. |
| 116-1-45-294726 | Nozzle 1 1/4" BSP 360° | Brass. Available with different drill sizes. |
| 116-1-45-294727 | Nozzle 1 1/2" BSP 360° | Brass. Available with different drill sizes. |
| 116-1-45-294728 | Nozzle 2" BSP 360° | Brass. Available with different drill sizes. |

## Release cabinets

| Part number | Name | Description |
|---|---|---|
| 116-814470 | Valve release cabinet | Steel. Available in stainless steel. |
| 116-814610 | Pneumatic release cabinet. | With time delay and by-pass. Steel. Available in stainless steel. |
| 116-814640 | Pneumatic supply cabinet | With time delay and by-pass. Steel. AVailable in stainless steel. |
| 116-814011 | Wire release cabinet | With 2 corner pulleys |

## Miscellaneous

| Part number | Name | Description |
|---|---|---|
| 116-162045 | Flexible hose SS 1 1/2" X 610 mm PN60 | |
| 116-162055 | Flexible hose SS 2" X 787 mm PN55 | |
| 116-243047 | Key holder with hammer and chain | |
| 116-198405 | Shuttle valve with OD 6 mm tube. | |

# Drencher systems

Autronica drencher systems are reliable, simple and effective fire suppression systems offering significant advantages:

- Quick fire suppression
- Sea water can be used, even with water mist nozzles
- Prevent fires from spreading over a large area by means of water curtains
- Cool down protected equipment
- Simple and reliable operation
- High flexibility in design and installation

Autronica drencher systems are used to protect different areas onboard, both inside and outside. For instance:

- Cargo tank decks as chemical oil/tankers
- LFL and seismic vessels
- Car-decks (open or closed)
- Helidecks and helicopter landing areas
- Bow and stern loading areas
- LNG and other fuel tanks

Depending on the application, low expansion foam in different mixing concentration can be added to the water. All the foams concentrates are approved by all the major classifications societies and fulfill IMO requirements.

**Discharging devices**

Autronica can deliver a broad range of discharging devices to meet the requirements set by applicable regulations and to satisfy the needs of each specific vessel. In particular for car decks, we can offer a water mist nozzle approved with use of sea water: this is a unique product providing huge benefits to our customers.

- Highly reduced water consumption (around 1/3 compared to traditional water spray nozzles)
- Smaller drainage pumps
- No need for dedicated water pumps
- No need for fresh water tank

Other discharging devices include: Jet/fog nozzles, manual and remote operated monitors, water spray nozzles, branch-pipes and pop-up nozzles.

All foam discharging devices have been tested according to the relevant regulations and fulfill IMO requirements.

# FlexiFOG – local protection

## Low-pressure water mist system

**Local protection in accordance with IMO MSC/Circ. 913**

Low-pressure water mist fire-fighting system provided for local fire suppression in areas, as specified in SOLAS II-2/10.5.6 for category A machinery space, such as top of main engine, top of auxiliary engines, boiler fronts, incinerators and fuel oil separators.

The system may be released locally by use of manual release button within the protected space and from manned station or automatic by fire detectors for ships with unattended machinery space.

The central operating panel should always be located in the manned station
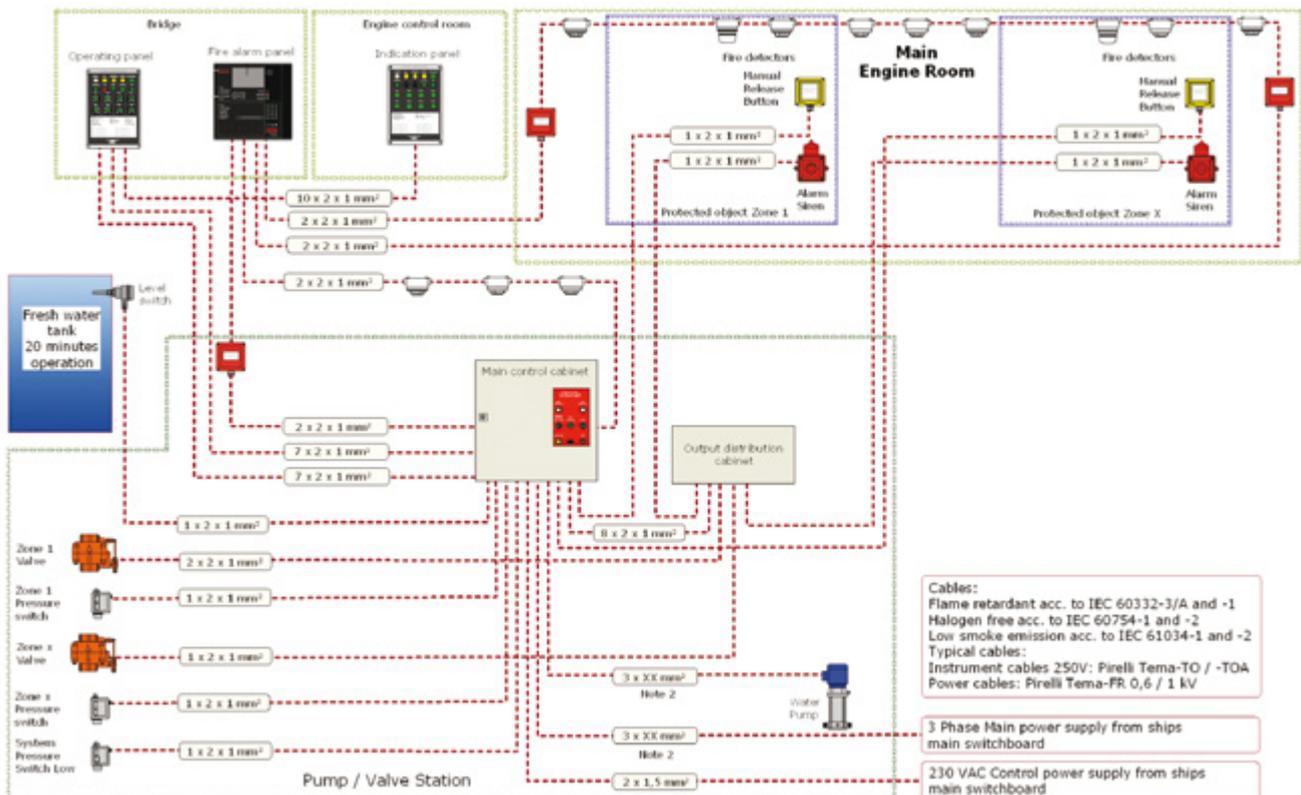
**Control systems**

- Option 1
  With integrated AutroSafe I/O for interconnection with the ship's AutroSafe fire detection system. The advantage is saving cables as one of the AutroSafe loops are routed through the local protection control panel.
- Option 2
  For integration with any type of ships fire detection system. Voltage free outputs from the ships fire detection system is required.
- Option 3
  Touch screen operated system with integrated fire detector loops for conventional fire detectors. Automatic activation based on any two detectors on the loop covering one object.

**Advantages**

- Tested in accordance with IMO MSC/circ. 913
- Low water consumption, 1,1 – 1,6 l/min./m$^2$
- Low power consumption, 1,5 – 5,5 kW
- Height 0,5 – 8 meters, operating pressure, 4 bar
- Height 8 – 14,5 meters, operating pressure, 9 bar
- Small pipe size, ¾"
- Low weight piping, PN10 and PN16
- Type approved by all major classification societies
- Holding wheel mark certificate, Module B and D

**Low pressure water mist local protection integrated with AutroSafe interactive fire detection system – Typical layout**

## Low-pressure water mist system

**For Machinery Spaces cat. A and cargo pump room in accordance with IMO MSC/Circ. 1165**
Low-pressure water mist fire-fighting system provided for total flooding in areas, as specified in the FSS Code chapter 7 section 2.2 for category A machinery space and cargo pump room. The system can be supplied to any vessel with machinery spaces volume up to 3348 $m^3$. FlexiFOG® can protect up to 10.1 meters height with one single grid. The bilge is also protected by FlexiFOG. No additional nozzles required to fulfil IMO MSC/Circ. 913 for protection of high risk areas.

The system may be released locally within the protected space and from manned station. The control panel will always monitor and indicate status of the system. Automatic release possibility for local protection when unmanned engine room condition.

Common control system with local protection and accommodation.

Galvanised steel pipes can be used.

**Advantages:**
- Tested and approved in accordance with IMO MSC/circ. 1165
- No need for tank for first minutes operation
- No need for doorway manifolds
- Low water consumption, 1,71 l/min./$m^2$
- Low power consumption, 15-60 kW
- Low pressure, 10,45 bar
- Height up to 10,1 meters, single level
- Low weight piping, PN16
- For manual electric operation
- Type approved by all major classification societies
- Holding wheel mark certificate, Module B and D

**Low-pressure water mist total flooding: Typical layout according to IMO MSC/Circ. 1165 combined with local protection according to IMO MSC/Circ. 913**

## FlexiFOG – accommodation

### Low-pressure water mist system

**For Accommodation and Public Spaces in accordance with IMO MSC Res. 265(84)**
The Autronica low-pressure water mist fire suppression system is provided for accommodation areas as specified in the FSS Code chapter 8, section 1 and 2.

The control system consists of a single CPU or two CPUs where Safe Return to Port is required. Accommodation system zone monitoring is either hardwired to the CPU or connected to the Ethernet ring via IE/As-I link modules.

Operation / Indication are by minimum two touch screens connected to the Ethernet.

The micro nozzles have integrated heat sensitive elements with ultra fast response character at a nominal release temperature of 57°C. The system can be delivered together with FlexiFOG total flooding and local protection without the need of having a double set of pumps or control panels.

**Application**
Low-pressure water mist system for protection of accommodation area as specified in IMO MSC Resolution 265(84) and SOLAS II-2/12,

**Advantages:**
- Tested in accordance with IMO MSC Res. 265(84)
- Less power consumption, 15 – 30 kW
- Less pressure, 10 bar
- Less weight piping, PN16
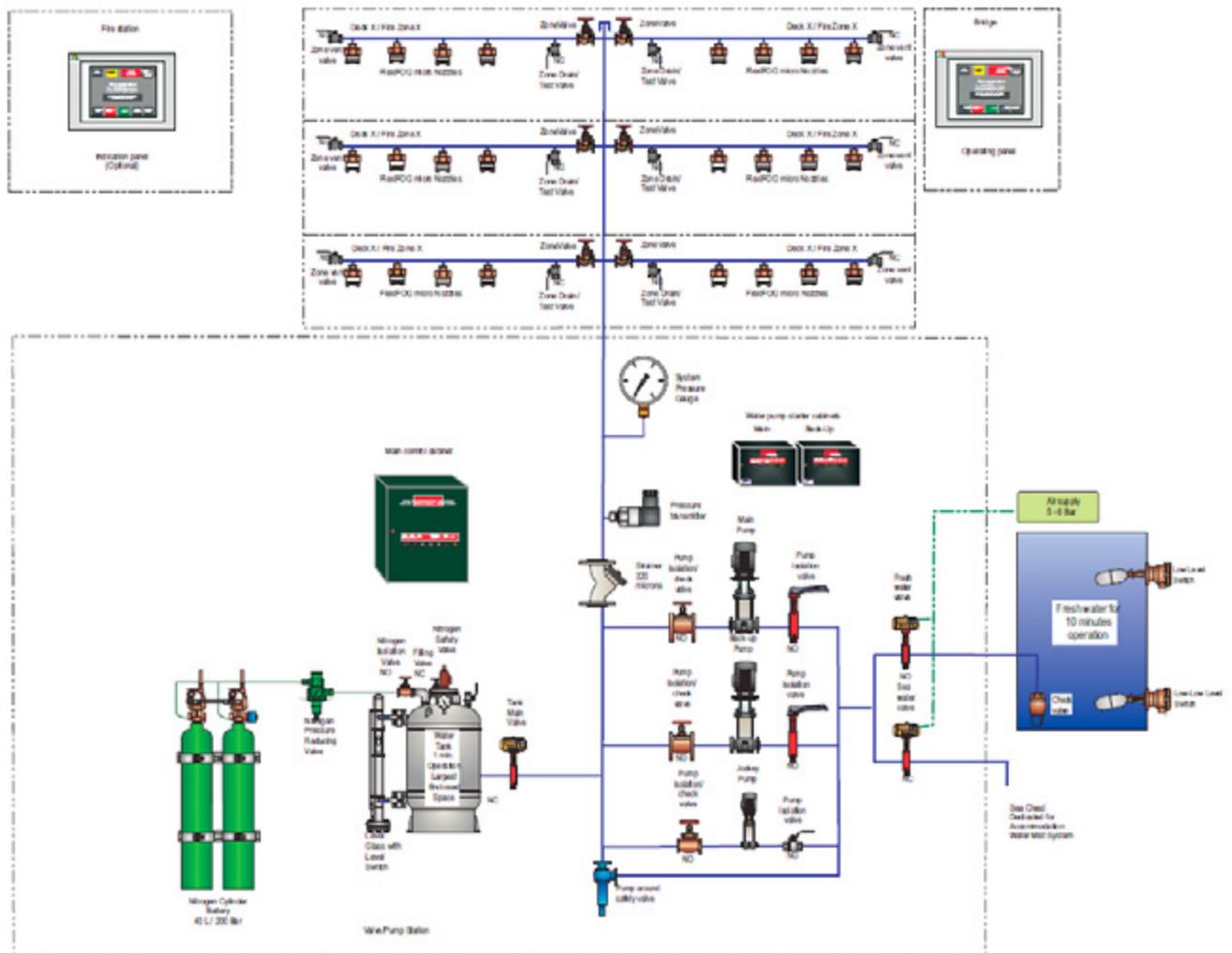
# Low-pressure water mist systems and Safe Return to Port

**Safe Return to Port**

The Safe Return to Port amendment to the IMO SOLAS regulations was made effective from 1 July 2010. The goal is that a vessel remains functional even in the case of fire or flooding in one compartment and is able to return safely to port without the need to abandon ship.

The regulations are mandatory for passenger ships having a length of 120 metres or more or having three or more main vertical zones. These vessels have to be able to return to port after a casualty case, not exceeding a defined flooding or fire casualty threshold, and provide all persons on board basic services in so-called 'safe areas'. For fire casualty cases exceeding the casualty threshold but not exceeding one main vertical fire zone, systems for supporting orderly evacuation have to be available for 3 hours.

**The low-pressure water mist solution**

The control system consists of two CPUs, each with its own program. Machinery space systems are hardwired with redundant zone valves. Manual release buttons have inputs to both CPUs.

Accommodation system zone monitoring is connected to the Ethernet ring via IE/As-I link modules.

Operation / Indication are carried out by minimum two touch screens connected to the Ethernet ring. In normal operation, the main CPU is controlled. Change-over to the back-up CPU is carried out automatically or manually from either of the touch screens.

Each of the pump packages has a 100% capacity and is connected to its own dedicated sea chest. The pump package is common for both accommodation and machinery space systems, i.e. it is not necessary to have separate pumps for each of the applications. The pump units is located in the foremost and aftmost main vertical zone.

Zone valves for machinery space protection have 100% redundancy and should be located at the pump station. Zone valves for accommodation are normally located outside the protected fire zone within a dedicated A0 enclosure, i.e. duplicate zone valves are not required. If located outside A0 enclosure, the zone valves has to be duplicated..

**Application**

Low-pressure water mist system for protection of accommodation area, machinery space cat. A and pump rooms, and local protection, machinery space cat. A. If local protection is separate, i.e. not a part of the total flooding system, SRTP requirements is not required.

**Typical layout according to IMO SOLAS Safe Return to Port**
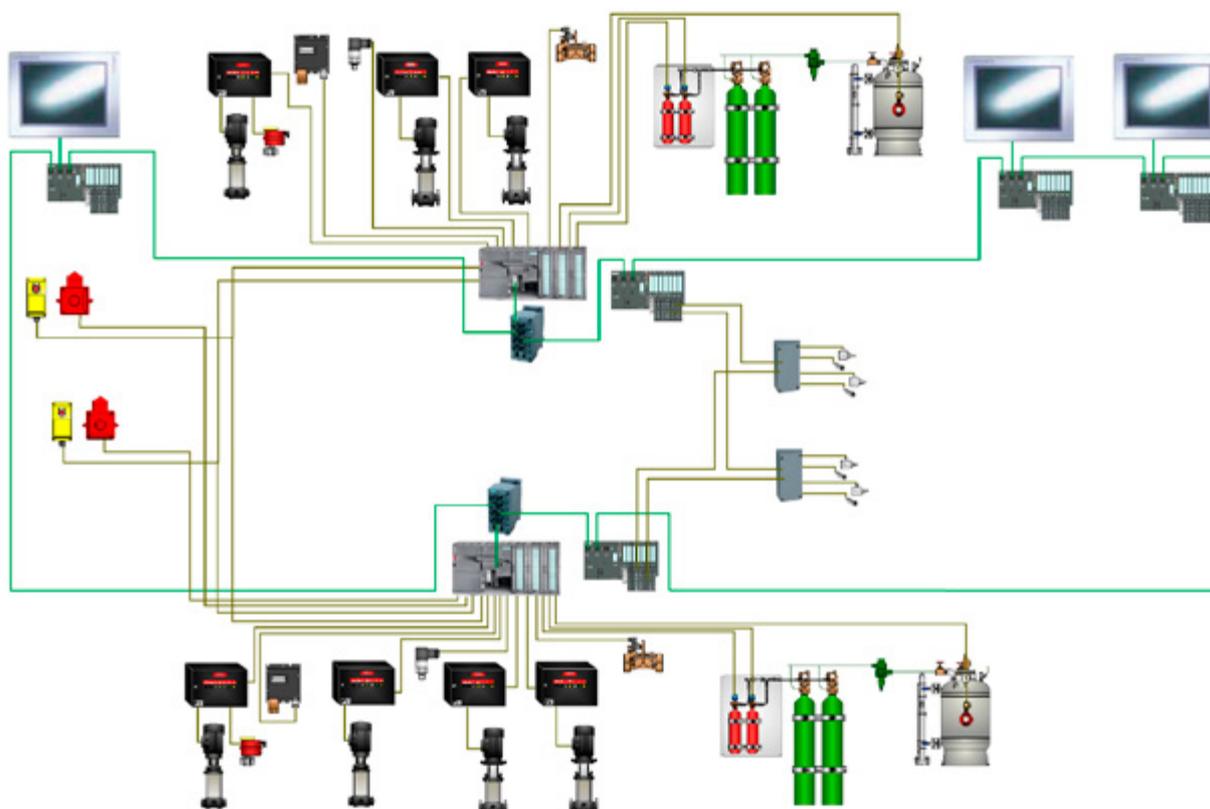
## Control cabinets and accessories

| Part number | Name | Description |
|---|---|---|
| 116-901110.KIT | Control panel suppression system | Control panel for FlexiFOG water mist fire suppression system. Options and accessories on request. |

## Operating panels and accessories

| Part number | Name | Description |
|---|---|---|
| 116-901040 | Operating panel, 12" multicolour touch screen | Flush mounting |
| 116-901041 | Operating panel, 12" multicolour touch screen | Surface mounting |
| 116-901037 | Operating panel, 7" multicolour touch screen | Surface mounting, for remote operation |
| 116-901035 | Operating panel, 7" multicolour touch screen | Flush mounting, for remote operation |
| 116-138590 | Operating panel, 10 zones | |
| 116-138595 | Indication panel, 10 zones | |
| 116-142056 | Backbox | For bulkhead mounting of operating and indication panels |

## Nozzles and accessories

| Part number | Name | Description |
|---|---|---|
| 116-900930 | Nozzle, LO-Flow M5 | M5 nozzle in naval brass for machinery space systems (total flooding and local protection) |
| 116-900960 | Nozzle K6 | K6 nozzle in naval brass for machinery space systems (total flooding). |
| 116-900960.SS | Nozzle K6 SS | K6 nozzle in stainless steel for machinery spaces systems (total flooding) |
| 116-900950 | Nozzle FlexiFOG B1 | B1 nozzle in naval brass for bilge area in machinery spaces |
| 116-900950.SS | Nozzle FlexiFOG B1 SS | B1 nozzle in stainless steel for bilge area in machinery spaces |
| 116-900980 | Nozzle RO-RO OH-OPX1 | OH-OPX1 nozzle in naval brass for RO-RO and special category spaces |
| 116-900980.SS | Nozzle RO-RO OH-OPX1 | OH-OPX1 nozzle in stainless steel for RO-RO and special category spaces |
| 116-900820.57 | FlexiFOG micro nozzle | FlexiFOG micro nozzle. Naval brass, crome plated. Available in different types for different areas (cabins / corridors / public spaces / storages) and activation temperatures (57°C / 93°C) |
| 116-900700.57 | FlexiFOG OH nozzle | FlexiFOG OH nozzle. Naval brass, crome plated. Available in different types for different areas (cabins / corridors / public spaces / storages) and activation temperatures (57°C / 93°C) |
| 116-700222 | Drencher nozzle | Available with different K-factors: 22, 41, 47, 57, 62 |
| 116-177443 | High velocity nozzle | Available with different K-factors: 23, 43, 80 |

| Part number | Name | Description |
|---|---|---|
| 116-177559 | Medium velocity nozzle | Available with different K-factors: 16, 23, 40, 59 |
| 116-177499 | Nozzle, Thermoshield K260 | |
| 116-174965 | Nozzle JET/FOG MINI GN-5 | Other sizes on request |
| 116-900852 | Rosette square | Rosette for FlexiFOG micro nozzle. Square shape. Stainless steel. Grit finishing. Price on request for different finishing (polished / painted) and materials (brass). |
| 116-900862 | Rosette circular | Rosette for FlexiFOG micro nozzle. Circular shape. Stainless steel. Grit finishing. Also available in different finishes (polished / painted) and materials (brass). |
| 116-900870 | Cover plate Ø 95 | Cover plate to be used when replacing old type FlexiFOG accommodation nozzles with FlexiFOG micro. Stainless steel. Polished finishing. |
| 116-900895 | Hex pipe for installation of FlexiFOG micro nozzles | Tool for installation of FlexiFOG micro nozzles |
| 116-162625 | 500 mm hose DN10 | 3/8" BSP / 15 mm tube end. Available also with 1000 mm lenght |

## Valves and accessories

| Part number | Name | Description |
|---|---|---|
| 116-100170 | Valve ball DN20 BSPF | Other dimensions available on request (DN8-50) |
| 116-100656 | Valve ball DN15 wafer | For pressure vessel level indicator |
| 116-110030 | Valve butterfly manual operated DN 80 DIN PN 16 | Other dimensions available on request (DN40-150) |
| 116-110440 | Valve, Butterfly, El/Pneumatic operated, DN 100 | Supplied normally open or normally closed (NO / NC). Other dimensions available on request (DN40-150) |
| 116-106140 | Valve, Butterfly, Motor operated 230 VAC, DN 100 | Other dimensions available on request (DN50-150) |
| 116-931120 | Valve ball DN20 BSPF with cam lock quick coupling | Other dimensions available on request (DN25-50) |
| 116-119633 | Valve, Zone DRY remote control DN25 24VDC | Other dimensions available on request (DN20-50) |
| 116-119730 | Valve, Zone remote control DN80 FL 24VDC | Other dimensions available on request (DN50-150) |
| 116-137032 | Valve, check DN32 DIN PN 16 w/hand wheel, threaded BSP | Other dimensions available on request (DN20-50) |
| 116-137530 | Valve, check DN80 DIN PN 16 w/hand wheel | Other dimensions available on request (DN25-100) |
| 116-136425 | Valve Check DN25 BSP | Other dimensions available on request (DN32-50) |
| 116-136442 | Valve foot DN40 PN25 Bronze | Other dimensions available on request (DN32-50) |
| 116-117730 | Valve pressure reducing DN80 | Other dimensions available on request (DN40-100) |
| 116-115680 | Valve, pump around DN80 | Available with different set pressures. Other dimensions available on request (DN40-50) |
| 116-105026 | Valve Ball DN25 EL 230AC | Other dimensions available on request (DN32-50) |
| 116-115025 | Valve, Safety, DN25 BSP | Available with different set pressures. Other dimensions available on request (DN32-50) |
| 116-104020 | Valve, Hydrant DN 50 90°, PN 16 | |

| Part number | Name | Description |
|---|---|---|
| 116-901130 | Valve control cabinet for motor operated valve | |

## Strainers

| Part number | Name | Description |
|---|---|---|
| 116-170140 | Strainer DN40 BSPF 320 microns | Other dimensions available on request (DN25-50) |
| 116-170540 | Strainer "Y" DN100 FL 320 microns | Other dimensions available on request (DN50-100) |
| 116-170340 | Strainer "Y" DN100 FL 1000 microns | Other dimensions available on request |

## Orifice

| Part number | Name | Description |
|---|---|---|
| 116-196550 | Orifice DN50 DIN PN16 AISI 316 | Other dimensions available on request  (DN25-150) |

## Pumps and accessories

| Part number | Name | Description |
|---|---|---|
| 116-175366 | Water pump 380-415 AC/50Hz/18,50 kW | Other sizes available on request (1,50 - 37,00 kW) |
| 116-175832 | Water pump 380-480 AC/60HZ/4,00 kW | Other sizes available on request (1,50 - 37,00 kW) |
| 116-175175 | Water pump 690 AC/60HZ/30,00 kW | Other sizes available on request (1,50 - 37,00 kW) |
| 116-176514 | Foam pump 380-415 AC/50HZ/1.50 kW | Other sizes available on request (1,10 - 18,50 kW) |
| 116-176012 | Foam pump 380-480 AC/60HZ/2.20 kW | Other sizes available on request (1,10 - 18,50 kW) |
| 116-176312 | Foam pump 690 AC/60HZ/2.20 kW | Other sizes available on request (1,10 - 18,50 kW) |
| 116-175932 | Coupling for pump. 1 1/4" BSP | |
| 116-175950 | Coupling for pump. 2" BSP | |
| 116-175994 | Pump Self Suction Aspirator 700 Nl/min. Air Driven | Also available with with capacity 300 and 500 Nl/min |
| 116-902400.KIT | Pump start cabinet DOL 220-690 VAC | 50-60 Hz Main / Emergency supply. Options and accessories on request. |
| 116-902430.KIT | Pump starter SOFT 230-440 VAC | 50-60 Hz Main / Emergency supply. Options and accessories on request. |
| 116-902440.KIT | Pump starter SOFT 690 VAC | 50-60 Hz Main / Emergency supply. Options and accessories on request. |
| 116-902460.KIT | Pump starter DOL M 220-690 VAC | 50-60 Hz Main supply. Options and accessories on request. |
| 116-902480.KIT | Power distribution cabinet | Options and accessories on request. |
| 116-902490 | Change over unit 25 A 230-690 | |

## Tanks, pressure vessels and accessories

| Part number | Name | Description |
|---|---|---|
| 116-169500 | Transparent Tank 500 l Ø 750 mm X 1290 mm | Other volumes on request (100 - 1000 l) |
| 116-169660 | Transparent tank 1600 l with steel frame | |
| 116-166400 | GRP Tank 4000 l Ø 1600 mm x 2280 mm | Other volumes on request (2500 - 5000 l) |
| 116-168320 | Pressure Vessel - Stainless Steel 210 litre Horizontal | Other volumes on request (340 - 590 l) |
| 116-148550 | Level indicator PN10 acrylic tube for GRP tank | |
| 116-148610 | Level indicator for pressure vessel c/c 500 mm | |
| 116-148620 | Level indicator for pressure vessel c/c 1000 mm | |
| 116-903140 | Cylinder N2 40L, El/Pneumatic | |
| 116-903040 | Cylinder N2 40L, Pneumatic | |
| 116-117025 | Valve, Nitrogen pressure regulator, 1" | |
| 116-933002 | Manifold, Nitrogen, 1/2", for 2 Cylinders | |

## Foam equipment

| Part number | Name | Description |
|---|---|---|
| 116-500450 | AFFF 1% foam liquid in 200 l drum. | |
| 116-500452 | AFFF 1% foam liquid in 25 l can. | |
| 116-500470 | Alcoohol resistand foam liquid 3% in 200 l drum | |
| 116-500472 | Alcoohol resistand foam liquid 3% in 25 l can | |
| 116-504424 | Foam proportioner DN100 | Mixing percentage: 1% or 3%. Capacity: 1200-4000 l/min. Price on request for other dimensions (DN40-150) |
| 116-504508 | Foam inductor 3" - variable flow. | Mixing percentage 1%. Capacity 140-1400 l/min |
| 116-506610 | Foam cabinet with branch pipe | Foam cabinet including self aspirating portable branch pipe, 2 x 15 m hose, 25 l AFFF1% foam liquid. |
| 116-173080 | Foam monitor manual JET/FOG - DN80 | Capacity up to 3700 l/min. Other capacities (6000 - 11 700 l/min) available on request. |
| 116-173100 | Foam monitor electric remote JET/FOG - DN100 | |
| 116-502394 | Joy stick panel for control of foam monitors, portable | |
| 116-502385 | Foam monitor control cabinet | |

## Miscellaneous

| Part number | Name | Description |
|---|---|---|
| 116-138560 | Manual release button, Local release. | |
| 116-138567 | Manual remote release station | Control Station Local Start/Stop, IP66, Stainless steel. |
| 116-139603 | Alarm, Audible/Visual 105 dB / 24 VDC | Other sounds levels (112 - 121 dB) on request |
| 116-139602 | Electronic alarm siren with flash light | |
| 116-148355 | Level Switch with float "Mobrey", horizontal installation | |
| 116-234950 | Optical smoke detector (conventional) | IMO approved. Including backbox and base |
| 116-145160 | Pressure gauge  0 - 25 bar. 63 mm | |
| 116-145365 | Pressure gauge 0 - 25 bar, 100 mm, 1/2" BSP | |
| 116-146503 | Transmitter, System pressure 0-25 Bar, 4-20 mA | |
| 116-146507 | Transmitter, System pressure 0-25 Bar, 0-10V | |

# K-5 Wet chemical system

## For DFF protection

K-5 wet chemical system is an effective and reliable fire suppression system designed to extinguish fires in deep fat fryers quickly and effectively. The wet chemical agent has been specially formulated to suppress fires in cooking oils and grease, and prevents re-ignition by forming a thick soapy vapour barrier between the surface of the fuel and the atmosphere. The wet chemical agent does not damage surrounding work surfaces, is not toxic or harmful and is easy to wash away after discharge, using proprietary cleaning products.

K-5 wet chemical system is activated by a point heat detector placed directly over the protected appliance or in the extract air flow above that appliance. The K-5 system can also be operated manually by a button, or directly from the control panel. The agent is deployed through a single nozzle located directly above the protected appliance.

The gas required to pressurize the storage cylinder is produced in a controlled manner, from a solid propellant gas generator. The cylinder and gas generator remain at zero pressure until an electrical signal is received from the system control panel.

There are no moving parts in the system and consequently there is no scope for failure due to leaking propellant gas or from faulty valves, gauges or pumps. All external field circuits are monitored for both open and closed circuit conditions to assist in diagnostics.

K-5 wet chemical system has been tested in accordance with the requirements of International Standard ISO 15371:2009(E) and is holding type approval certificates from all the major classifications societies as well as valid MED certificate.
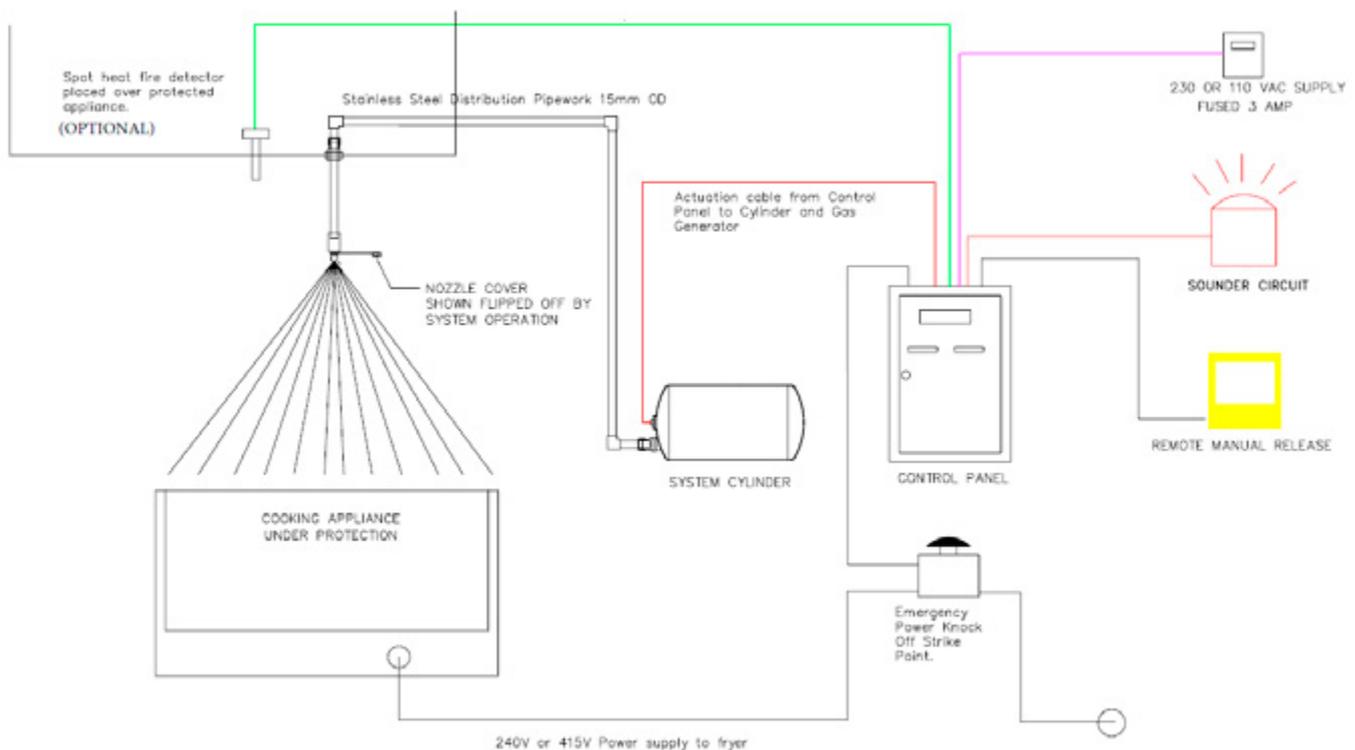


| Part number | Name | Description |
|---|---|---|
| 116-188025 | Complete Kidde wet chemical system | Complete wet chemical system for deep fat fryer protection. Cylinder with 5 l wet chemical agent, XV control system, 1 pc nozzle type F, heat detector included. |

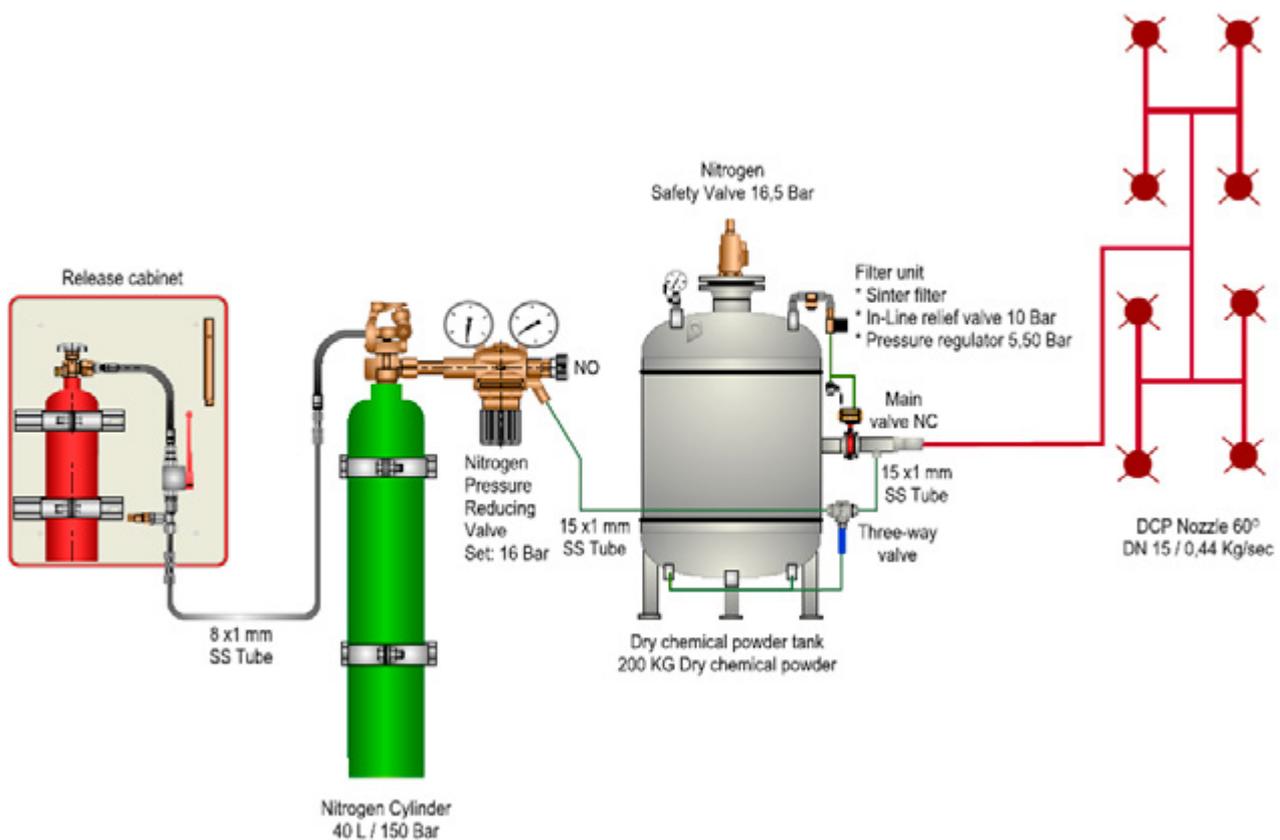## Dry chemical powder system

### For bunkering stations

Autronica Dry Chemical Powder System is a fire extinguishing system especially designed for bunkering stations. The system is able to break the chemical reactions during the combustion process. This makes Autronica Dry Chemical Powder System highly effective by extinguishing the flames almost immediately.

The system is non-toxic and harmless to people and the environment.

The powder is composed by very small particles (potassium bicarbonate) with added particulate material supplemented by special treatment to provide resistance to packing, caking and the proper flow capabilities.

The powder is stored in a tank at atmospheric pressure. Upon activation, the system is pressurized by nitrogen through a pressure regulator in order to give the best control of the discharge and ensure a steady discharge rate through the whole discharge period. The powder is then discharged through a distribution system onto or into the protected item/area.

The system holds DNV type-approval, ensuring compliance with IMO MSC.285(86).



| Part number | Name | Description |
|---|---|---|
| 116-610259 | Complete DCP system | Complete dry chemical powder system for bunkering station. 200 kg Furex-k extinguishing agent, 1pc. pressure tank with DnV approval, nitrogen pressurization system, 8 pcs. nozzles, hoses and instruction sign included. |

# CO$_2$ system

## For galley duct protection

Autronica's CO$_2$ system is specifically designed for the protection of one or more galley ducts. The system is designed to quickly achieve the necessary CO$_2$ concentration to extinguish a fire inside a galley duct.

The CO$_2$ cylinder is manufactured according to European Standards and it is located inside a CO$_2$ cabinet, usually placed close to the protected object. A number of CO$_2$ nozzles are installed inside the galley duct to achieve an evenly distribution of the extinguishing gas. An audible alarm is installed inside the protected area warning the personnel to evacuate upon activation of the system.

CO$_2$ systems for galley duct protection are designed to be rapid and simple to operate.



| Part number | Name | Description |
|---|---|---|
| 116-301501 | Complete CO$_2$ galley duct system | Complete system with the CO$_2$ cylinder installed into a GRP cabinet. The cabinet is fitted with 3 pcs. limit switches on the door for start of alarm siren, stop of ventilation fan and damper closing and CO$_2$ cylinder, 9 l / 6 Kg CO$_2$. 1pc. nozzle, alarm, warning and instruction sign included. |

# Contact information

**HEAD OFFICE
TRONDHEIM, NORWAY**

Autronica Fire and Security AS
Division Maritime
Bromstadveien 59
NO-7047 Trondheim
Norway
Phone: +47 90 90 55 00

**TØNSBERG, NORWAY**

Autronica Fire and Security AS
Stalsbergvn. 9
NO-3128 Nøtterøy
Norway
Phone: +47 33 38 25 00
E-mail: afs.omicron@autronicafire.no

**KOREA**

Autronica Fire and Security AS
#B 5F, Saesam B/D., 39, Sesil-ro,
Haeundae-gu, Busan
Rep. of Korea 612-842
Phone: +82 10 3064 0876
E-mail: samyul.han@autronicafire.no

**OSLO, NORWAY**

Autronica Fire and Security AS
Division Maritime
Nils Hansens vei 4
NO-0667 Oslo
Norway
Phone: +47 90 90 55 00

**USA**

Autronica Florida
3801 SW 47th Av. Suite 506
Ft.Lauderdale
Florida 33314
USA
Phone: +1 954 792 6772
Fax: +1 954 792 6191

**CHINA**

UTC Fire and Security China
15F Jiefang Building, No.300 Hankou Road
Shanghai
China
Phone: +86 21 63311235
Fax: +86 137 0168 8590

**MALAYSIA**

Autronica SE Asia, Australasia & Middle East
Level 20, Menara Standard Chartered
No. 30, Jalan Sultan Ismail
50250 Kuala Lumpur
Malaysia
Phone: +603-2117 5123
E-mail: matt.hine@autronicafire.no

**SALES**
Phone: +47 90 90 55 00
sales.maritime@autronicafire.no

**SERVICE ASSISTANCE**
Phone: +47 915 09753
service.maritime@autronicafire.no

**ORIGINAL SPARE PARTS**
Phone: +47 90 90 55 00
spares.maritime@autronicafire.no
omicron.spares@autroncafire.no

For general sales conditions, go to www.autronicafire.com.

Our mission is clear,
to make the world a safer place to live in. We know how important this task is, and this drives us to constantly develop smarter solutions.

Our pride and driving force are anchored in saving as many lives as possible, in protecting the environment and in securing property around us. In many cases, the consequences of a fire are enormous, and we have undertaken to understand how they occur, develop and can be fought. Our solutions must discover potential hazards in our surroundings as early as possible, without causing false alarms and uncertainty. This is a delicate balance, and our technology must be equally optimised in large cruise ships, in nuclear power stations and on oil platforms, as in kindergartens.

A masterly exercise in which we place all our honour.
And in this way, we create the safest and most reliable fire and gas safety products in the world.

**Protecting life, environment, and property**
**www.autronicafire.com**