NANO/MAR ALARM & EXTINGHUISING SYSTEM

NANO MARINE

The NANO fire alarm/extinguishing system is intended and designed for activation of a modular electrically activatable aerosol extinguishing generator.

- **Versatile**
- **Compact**
- **Easy operation**
- **Easy programming**
- **Logical system structure**
- **Dual activation technology**
- **Extinguishing at the source**
- **Input and output monitoring**
- **FCC, CE, EMC, DNV TAA000037H**

The NANO MAR system consists of:

- NANO Fire & extinguishing panel
- NANO Extinguishers Terminal Box 5/10

The basis is formed by the NANO control panel which is placed on the bridge or in its vicinity. Then there are two extinguisher terminal boxes (ETB). These ETB boxes must be placed outside, but in the immediate vicinity of the protected engine room.

The NANO is designed as a stand-alone fire detection extinguisher panel, used in systems to protect engine rooms in vessels, yachts or electrical cabinets or rooms, and other areas and equipment where the user needs to be able to suppress a fire quickly and effectively.

The NANO system has a DNV-CG 0339-2021 type approval with certificate No: TAA000037H. To obtain this type approval, the NANO system design has been extensively tested on the latest EMC requirements and Marine specific environmental conditions and has been approved accordingly. Where applicable the NANO meets the requirements of the FSS CODE, the International Maritime Code for Fire safety Systems.

Programming the NANO MAR

The NANO fire alarm/extinguishing release panel is easy to program with dipswitches and has the following programming options:

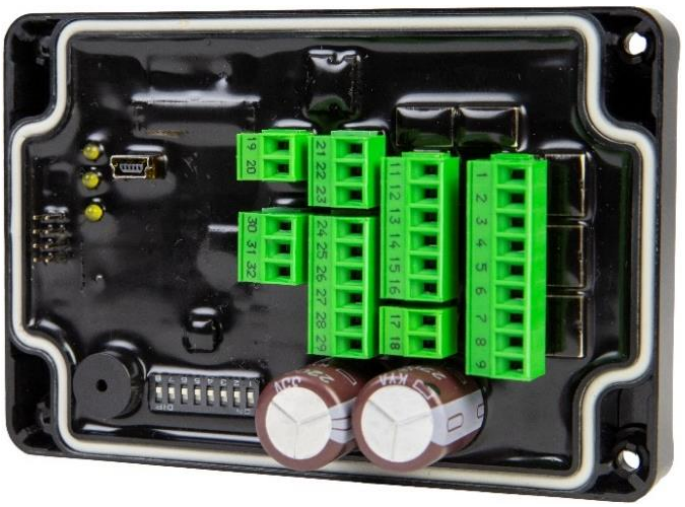
- DP 1 overrides the extinguishing delay timer when using one of the manual release buttons
- DP 2 extinguishing delay is disabled when the vessel is leaved
- DP 3 not applicable for marine applications
- DP 4 extinguishing release with a single, instead of a double stage fire detection
- DP 5 VFC relay switch at first or the second fire alarm
- DP 6,7-8 is for the delay timer settings, which can be set between 0 and 35 seconds

Our products are constantly being improved; specifications can change without notice.
K&G Groep BV Spoordijkhof 1 Raamsdonk Netherlands

NANO/MAR ALARM & EXTINGHUISING SYSTEM

Enclosure specification

Outside enclosure	: 120 x 80 x 58,5 mm w x h x d
Color of enclosure	: black RAL 9005
Enclosure material	: ABS suitable for outdoor use
Cable gland holes	: 7 predrilled holes



Environment

Ambient temperature range	: -25° to +55° Celsius
Dust and water rating	: IP65
Compass safe distance	: minimum 50 mm

Power related specification

Input voltage main / backup	: 12/24 VDC +/- 30%
Maximum power usage	: 1 Watt quiescent
	: 5 Watt in alarm
Maximum contact rate relays	: 30 VDC/1A
Voltage fire zones	: 15Vdc
Alarm current fire detectors	: max 60 mA
Sounder / beacon voltage	: 18-22 VDC
Sounder / beacon current	: max 100 mA

Further characteristics of the NANO alarm panel:

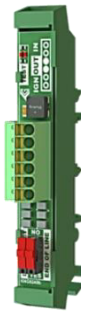
- the electronics of the NANO, except the connections and the dipswitches, are sealed by potting, what make it suitable for use in a contaminated environment
- can activate the extinguishing system either manually, or by means of the selected option, in single or double zone dependency fire detection alarm
- has VFC outputs for fire, fault, and ventilation off
- has a full monitored output for the releasing an extinguishing system and audio-visual alarm
- two full monitored fire alarm input groups[1] (zones) for spot detectors or linear heat detection cable
- two full monitored alarm input groups for external extinguishing release and hold function
- double extinguishing release buttons to prevent unwanted releases
- extinguishing hold release button to postpone a release
- extinguishing release delay to prevent unwanted release
- additional option to override the extinguishing delay at manual release
- historic event log memory readable from a mini-USB port and RS 485 Modbus com port

Extinguishers control

The NANO has a specially for aerosol system developed extinguishers terminal box, named ETB/MAR/BOX . This terminal connection box is equipped with built-in security electronics (ETB), which ensures that all igniters of the extinguishing units are activated. Further equipped with surge and reverse polarity protection. A red test LED that shows that an activation has occurred. An end line and extinguisher disable switch intended to disconnect the electrical activator from the extinguishing activation line. It turns the NANO system into a complete and reliable fire detection[1] and extinguishing system. The dimensions without glands and wall mounting accessories are 250 x 300 x 150 mm w x h x d

Note:[1] Fire detection is a programmable option

NANO/MAR ALARM & EXTINGHUISING SYSTEM

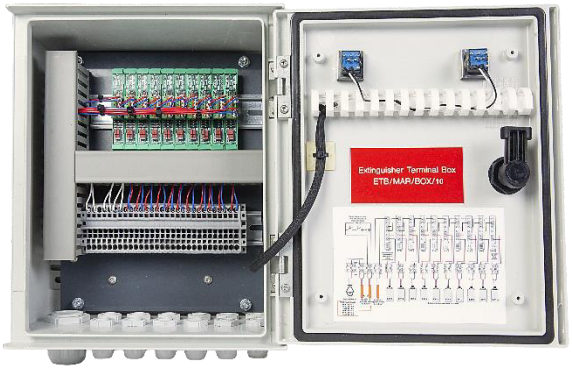


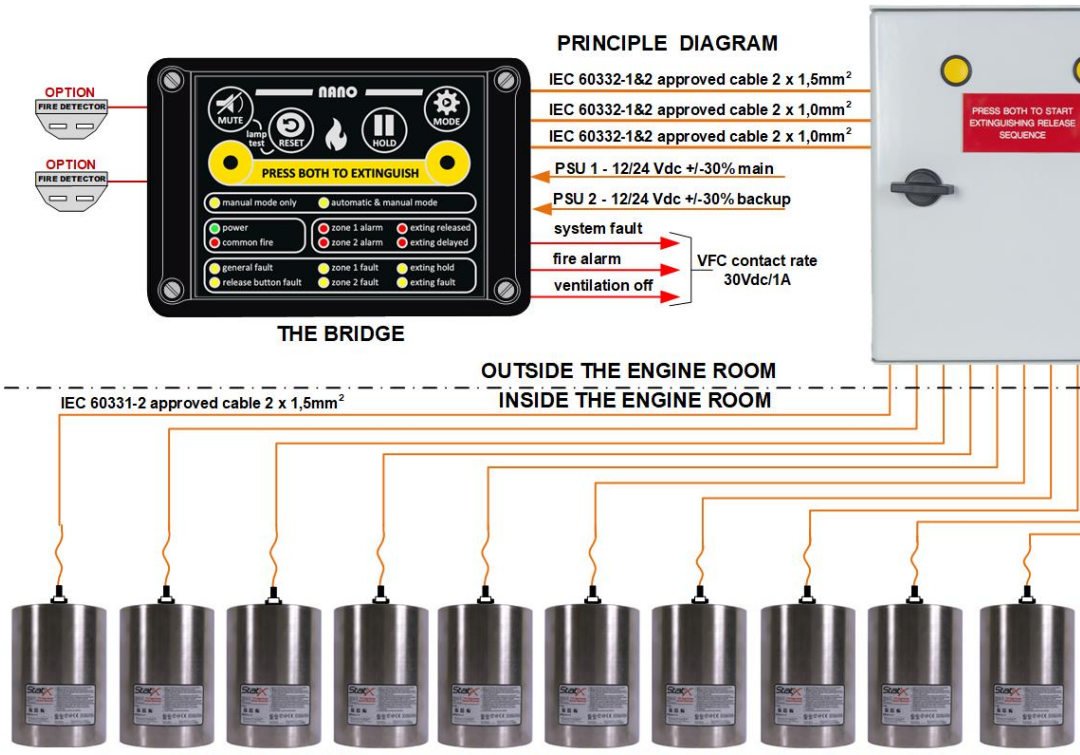
The most important characteristics of the ETB are:

- bypass protection ensures that all electrical igniters ignite, even if one igniter malfunctions and goes into high impedance before other igniters are activated
- the ETB has a switch that enable the end of line monitoring diode at the last igniter
- a second switch is for disconnecting the extinguisher from the system for testing or maintenance.
- a red test LED indicate the activation current is initiated
- the ETB is equipped with reverse polarity protection, which prevents connection errors.
- the ETB is equipped with surge protection, which reduces the risk of activating an extinguisher in the vicinity of a lightning strike

The ETB BOX

There are two extinguisher terminal boxes available and equipped with 5 or 10 extinguishers terminal boards (ETB). These ETB boxes must be placed outside, but in the immediate vicinity of the protected engine room. Suitable for connecting up to 5 or 10 aerosol extinguishers. From the ETB box a cable led to the KVB plug & play Stat-X extinguisher installed in the volume to protected. Similar to the front of the NANO, the front of the ETB box features two double-acting buttons for extinguisher release. When a fire emerges, press both extinguishing yellow release pushbuttons, this will trigger an alarm on the NANO control panel. The fire extinguishers will be released, depending on the DIP switch (time) settings. The cable connection between the NANO control panel and the fire extinguisher connection box is continuously scanned for faults, such as short circuits or cable breaks. From the extinguishers terminal box (ETB), each cable from the ETB to the fire extinguishers is individually and constantly monitored for fault or malfunction.





This schedule of working principles of the NANO fire extinguishing system is intended to be supportive of this leaflet and therefore not intended and suitable for technical realization. For more detailed information ask for the User Manual NANO-EN August 2022 V1.0 and contact the K&G Groep BV.