NANO ALARM & EXTINGUISHING SYSTEM

The NANO system

The NANO fire alarm& extinguishing system is designed and intended to activate a modular electrically activated extinguishing generator or a fixed fire suppression system.

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

The NANO system consists of:

NANO Fire & extinguishing panel
NANO Extinguishers Terminal Board

The NANO system has a DNV-CG 0339-2021 type approval with certificate TAA000037H. To obtain this approval, the NANO system design has been extensively tested and approved to the latest EMC requirements and Maritime specific environmental conditions.

TYPE APPROVED PRODUCT TAA000037H DNV DNV.COM/AF

Where applicable, the NANO also meets the requirements of the FSS CODE, the International Maritime Code for Fire Safety Systems. The NANO is small/compact and protects locations where a standard fire detection and/or extinguishant release panel is not applicable.

The NANO is designed to act as a stand-alone fire detection & extinguishant release panel for use in systems protecting engine rooms, compartments in vessels, yachts or vehicles, electrical cabinets or rooms, and other areas and equipment where the user should be able to detect and extinguish a fire quickly and effectively.

The NANO fire detection & extinguishing release panel offers an excellent value and performance for all small and compact fixed fire suppression systems.

Our products are constantly being improved; specifications can change without notice.
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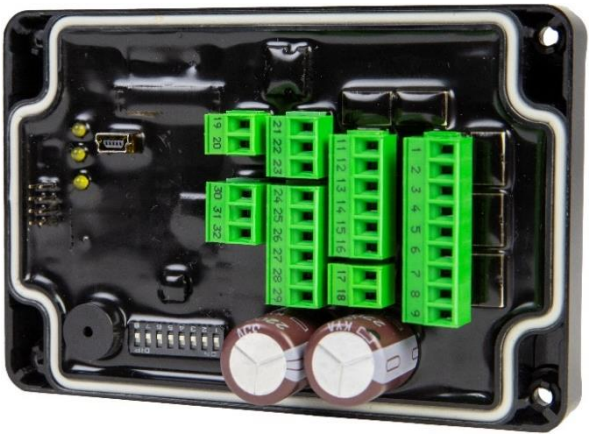
Enclosure specification

Outer enclosure	: 120 x 80 x 58,5 mm w x h x d
Enclosure color	: black RAL 9005
Enclosure material	: ABS suitable for outdoor
Cable gland holes	: 7 pre-drilled holes



Environment

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

Power 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
Detection zones voltage	: 15Vdc
Fire detector alarm current	: max 60 mA
Sounder / beacon voltage	: 18-22 VDC
Sounder / beacon current	: max 100 mA

Further characteristics of the NANO alarm panel:

- The NANO electronics, except the connections and the DIP switches, are sealed by potting, making them suitable for use in a contaminated environment
- The extinguishing system can be activated manually, or by means of the selected option, in single or dual zone dependency fire detection alarm
- VFC outputs for fire, fault, and fan off
- Fully monitored output for the extinguishant release and audio-visual alarm
- Two full monitored fire alarm input groups (zones) for spot detectors or linear heat detection cable
- Two fully monitored fire 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 extinguisher release delay following manual release
- Historic event log memory readable from a mini-USB port and Modbus RS485 communication port

The NANO fire detection & extinguishant release panel is easy to program with DIP switches and has the following programming options:

- DP 1 - overrides the extinguisher release delay timer when using one of the manual release buttons.
- DP 2 - extinguisher release delay is disabled if the vessel or vehicle is parked
- DP 3 the system is optionally suitable for electrical igniters or solenoid release technology
- DP 4 - extinguisher release with a single-zone fire alarm instead of a dual-zone fire alarm.
- DP 5 - VFC relay switch on the first or second fire alarm
- DP 6,7,8 - are for the delay timer settings and can be set between 0 and 35 seconds.

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Specials

In addition to the engine room of a vessel, the NANO can also protect the engine compartment of vehicles, including mining vehicles and others such as shovels, cranes, and loaders. If the extinguishing system is intended to protect the engine compartment of a vehicle, any programmed extinguishing delay must be disabled when the vehicle is parked, and the user leaves the vehicle. In this case, an extinguishing delay is of no use. When the vehicle function (DP2) is ON, the programmed extinguisher release delay is disabled when the vehicle is parked.

Dual extinguishing technology

The NANO is equipped with activation technology for two types of fire extinguishing systems. The NANO is suitable for activating electrical igniters intended for aerosol extinguishers or a system using a solenoid as release technology.

The Extinguishers Terminal Board

The ETB (Extinguishers Terminal Board) is specifically designed for the activation of aerosol extinguishers. The ETB (Extinguishers Terminal Board) is equipped with built-in safety electronics to ensure all extinguisher igniters are activated. Together with an end of line switch, this option makes the system a complete and reliable fire detection and extinguishing release system. The ETB (Extinguishers Terminal Board) unit is available in a built-in 35 mm DIN rail version.

The most important characteristics of the ETB

- Easy connection by means of push connection
- Minimum core diameter 0.5 mm² (AWG 20)
- Maximum core diameter 1.5 mm² (AWG 16)
- Bypass protection ensures all electrical igniters will ignite, even if one igniter malfunctions or behaves differently (e.g., ignites prematurely) and enters high impedance before other igniters are activated
- The ETB has a switch that activates 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 indicates the activation current is initiated
- The ETB is equipped with reverse polarity protection, which prevents connection errors
- The ETB is equipped with surge protection, reducing the risk of activating an extinguisher in the vicinity of a lightning strike
- ETB dimensions 12,8 x 85 x 34,19 mm w x h x d

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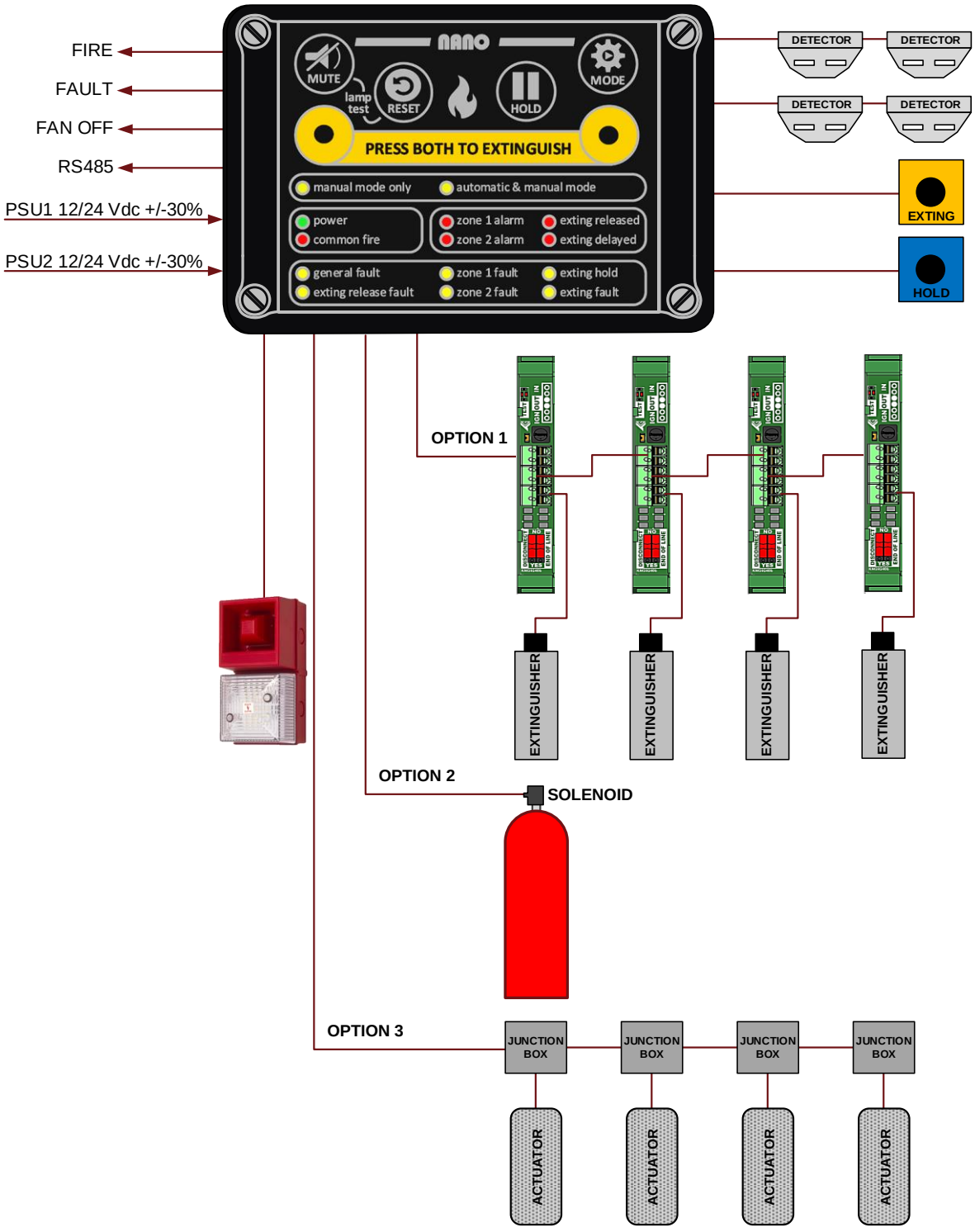
PRINCIPLE DIAGRAM



This diagram of the working principles of the NANO fire detection & extinguishing system is intended to support this leaflet and is therefore not intended or suitable for technical implementation. For more detailed information, please request the NANO User Manual.

Ordering

Article code NANO panel KG/NANO
Article code excluding junction box KG/ETB for low resistance igniter
Article code excluding junction box KG/ETB/H for high resistance igniter

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