



sm electrics

PRODUCT *CATALOG*

SAFETY ON BOARD



welcome.

Founded in 2002 sm electrics provides engineering and contract manufacturing services as well as key shipborne MED type approved alarm systems including Bridge Alert Management (BAM), Bridge Navigational Watch Alarm System (BNWAS), Light Signal Columns, Engine Order Telegraph and further maritime equipment. Its well established sales & service network covering the world's maritime hotspots complemented with well qualified and motivated staff as the company's backbone is resulting in sustained success.



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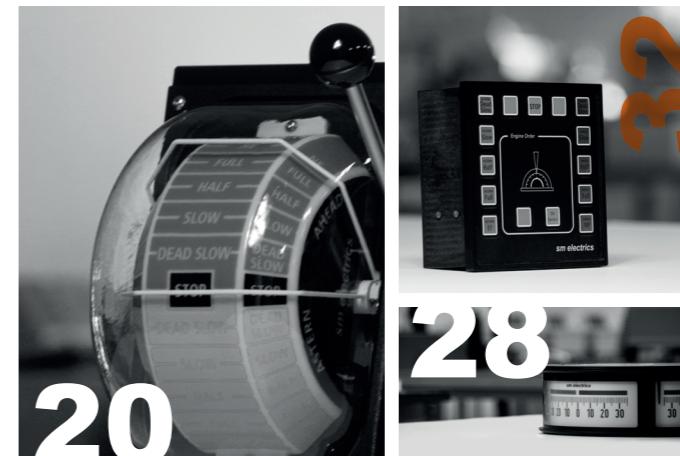
OPERATIVE LOCATION

Eichkamp 30
24217 Schoenberg
Germany



PRODUCT RANGE

Nautical Alarm System	06
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**all our products
at a glance**



NAUTICAL ALARM SYSTEM

NAS 24

The type approved NAS24 nautical alarm system has been designed to display up to 23 binary alerts on a modern touch screen panel. Due to its intuitive user interface, the NAS24 commissioning and start-up process can be easily performed by the ship's crew. The main focus of the NAS24 is to provide a convenient and economical alarm system with a wide range of application, such as nautical alarms, tank level alarms, bilge level alarms, watertight doors and fire doors.



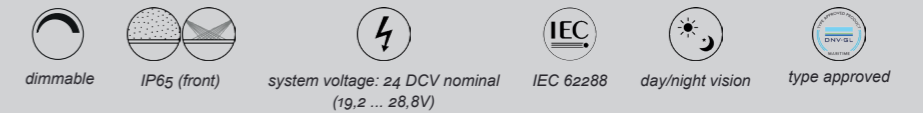
APPLICATION

7" full graphic display

easy to install

intuitive operation

The main advantage of the NAS24 is its concept of operations. The whole commissioning such as alarm text changes, alarm delays and alarm input characteristics of the 23 binary inputs can be adjusted on the 7" touch screen panel. This makes the NAS24 a perfectly customizable alarm system for any kind of alarm monitoring application. Due to its type approval certificate, the NAS24 can be installed on the bridge as well as in the engine control room or any other location. As an additional feature the NAS24 has also the possibility to connect a second synchronized alarm screen, which can be necessary for some application. In some cases an automation and monitoring system is too cost-intensive for the specific application, where the NAS24 can be the perfect choice. Nautical alarms, tank level alarms, bilge level alarms, watertight doors and fire doors are only a few examples of possible application.



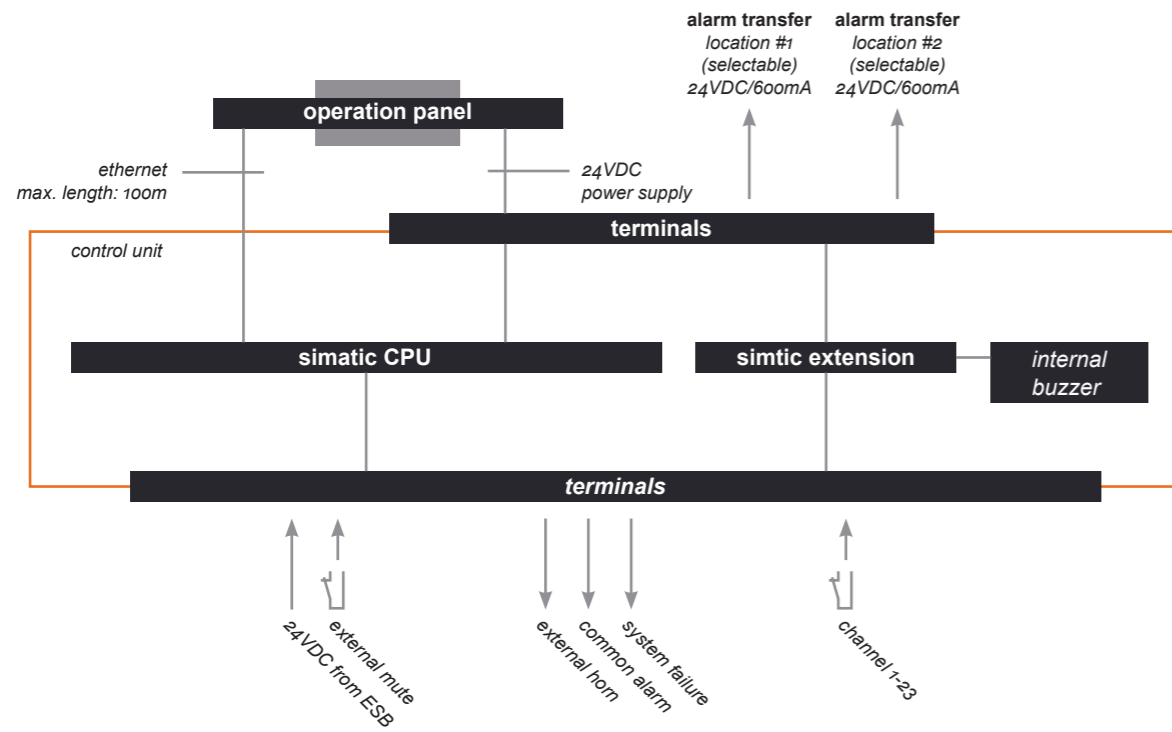
DATA & FEATURES

- 24 inputs / alarm channels (dry contacts expected)
- external mute (dry contact expected)
- internal buzzer & output for external buzzer*
- output for alarm transfer (common alarm)
- system failure (real watch dog)
- outputs for selectable alarm transfer locations*
- text and parameter adjustments via screen menu
- nautical and machinery alarms on one common screen, due to successful merging of both specific class requirements

* (600mA short-circuit protected voltage output 24VDC)

NAS 24

CONTROL UNIT



ADDITIONAL INFORMATION

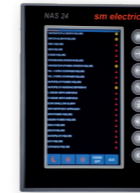
parameter adjustable by user:

- input logic n/o or n/c (each channel)
- alarm delay 0 ... 99 sec (each channel)
- each channel selectable as alarm or status indication
- alarm & status indication color selectable
- alarm transfer delay 0...99 sec (common alarm)
- 4 individual buzzer characteristics
- alarm text to be edited by user via on-screen keyboard
- on device user manual available
- system failure contact N/C 2A.
- ethernet cable length up to 100m
(between control panel and control unit)

PERIPHERY EQUIPMENT

CONTROL PANEL

770912

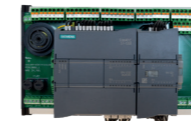


NAS | NAS 24-M02

- 7" screen (800 x 480px) (3:5)
- 8 hardware function keys
- dimension (158 x 214,9 x 55mm) (WxHxD)

CONTROL UNIT

770911



NAS | NAS 24-M01

- terminal modul with CPU and extension unit
- dimension (241 x 138mm)
- integrated alarm buzzer

ALARM PANEL STAGE #3 with buzzer (resettable)

770931



DMA | WAP.222.2.0.1

- for engineer's cabin
- 80 dB(A)
- flush mounted
- 24 VDC; IP 23
- resettable

7" full graphic display

The dimmable 7" full graphic touch panel of the NAS24 provides a perfect overview of the current alarm situation. Its great viewing angles and contrast ratio makes it a reliable screen for this important application range.





COLD STORE LOCK-IN ALARM SYSTEM

LIAS

That highly standardized and modular system is based on a certified 4,3" full graphic touch panel with tight PLC TS35 terminal rail module. Up to six calling points will be monitored and clearly indicated including escalating alarm devices and interface to the higher-ranking BAM/CAM system. The system has been designed with 230VAC main and 24VDC backup supply.



PERIPHERY EQUIPMENT



LIAS



BRIDGE NAVIGATIONAL WATCH ALARM SYSTEM

BNWAS le guardian 2025

The bridge navigational watch alarm system (BNWAS) monitors bridge activity and detects operator disability that could lead to marine accidents. The system monitors the awareness of the Officer Of the Watch (OOW) and automatically alerts the Master or another qualified person if for any reason the OOW becomes incapable of performing the OOW's duties. This process is subdivided in different alarm stages which primarily try to alert the OOW via visual and audible alerts.



APPLICATION

compact connecting module

intuitive control philosophy

easy to install

The bridge navigational watch alarm system (BNWAS) monitors bridge activity and detects operator disability that could lead to marine accidents. The system monitors the awareness of the Officer Of the Watch (OOW) and automatically alerts the Master or another qualified person if for any reason the OOW becomes incapable of performing the OOW's duties. This process is subdivided in different alarm stages which primarily try to alert the OOW via visual and audible alerts.

In case the BNWAS does not receive any evidence of life, the alert will be transferred to the selected backup Officer Of the Watch (OOW) cabin(s). Assuming that no acknowledgement has been triggered either, the ultimate alert stage will activate alarm devices in public area. Additionally, the BNWAS provides the OOW with a means of calling for immediate assistance if required (emergency call).



dimmable



key-switch



MED type approved



system voltage: 24 DCV nominal
(18 ... 31,2V)



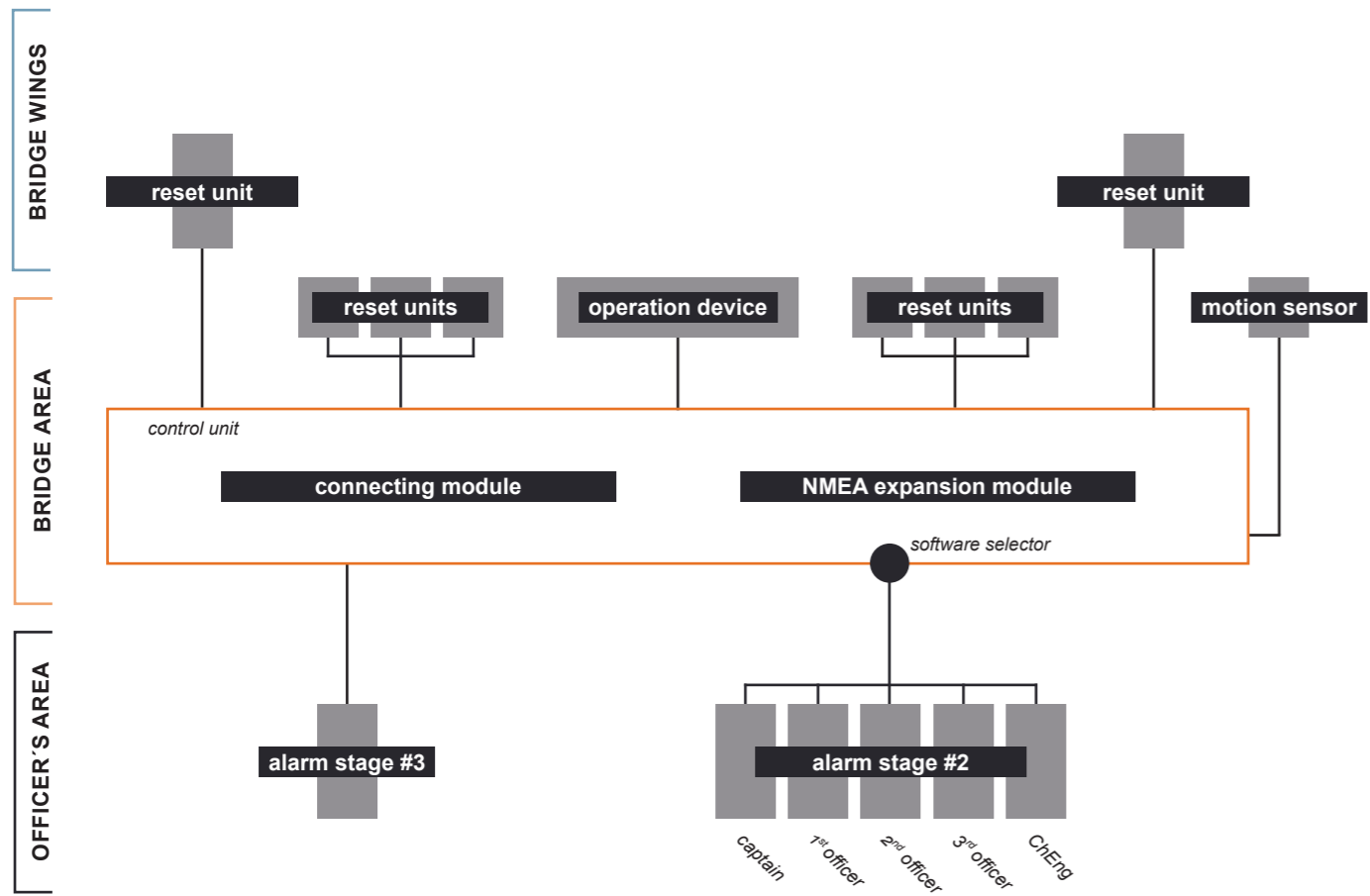
IEC 62616

DATA & FEATURES

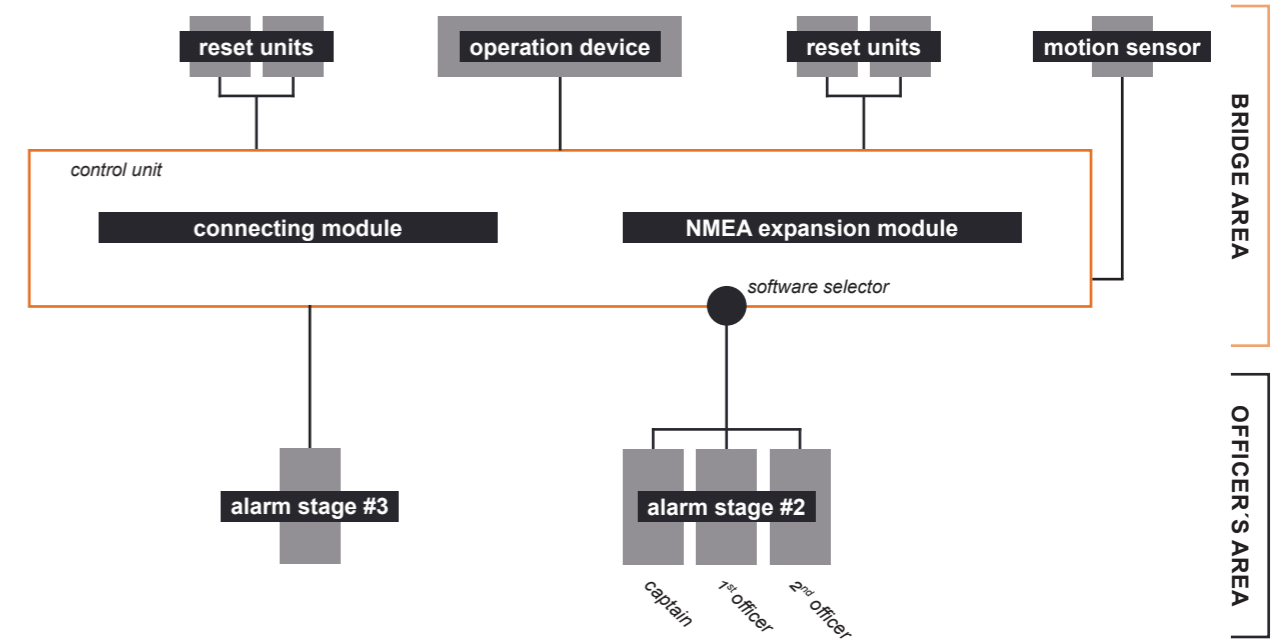
- 2 x 16 character coloured light display shows all relevant device and alarm states
- rotary encoder with integrated push button - simple but effective for user
- integrated buzzer, eight individual sound characteristics & volume adjustment
- main supply / back-up supply failure indication
- connecting module designed for TS 35 terminal rail
- emergency call facility (manual release & alarm transfer)
- NMEA bi-directional serial interface (e.g. for VDR link or alarm transfer from BAM/CAM)
- MED Type Approved (wheel marked) certificate no.: DNV-GL MEDB000034A
- MED Type Approved (wheel marked)
 - IEC 62288 Ed. 2.0 (2014-07)
 - IEC 62616(2010) incl. IEC 62616 Corr. 1 (2012)
 - IEC 60945 (2002) incl. IEC 60945 Corr. 1 (2008)
 - IEC 61162-1 ed4.0 (2010-11) and ed5.0 (2016-08)
 - IEC 61162-2 ed1.0 (1998-09)
 - IEC 62923-1/2

BNWAS

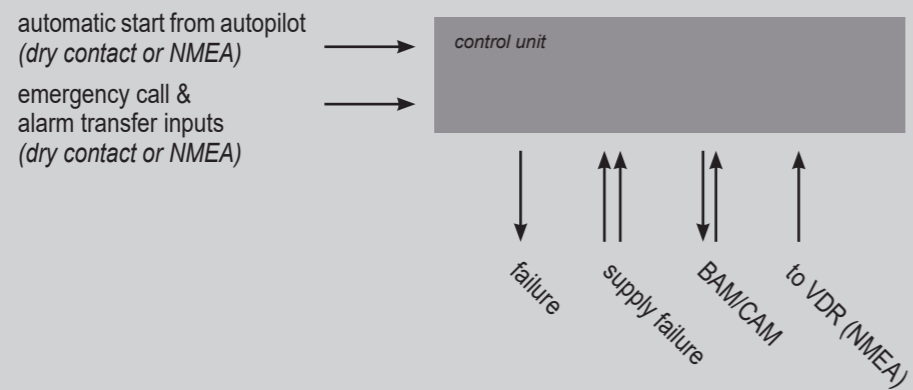
SAMPLE SYSTEM **large vessels**



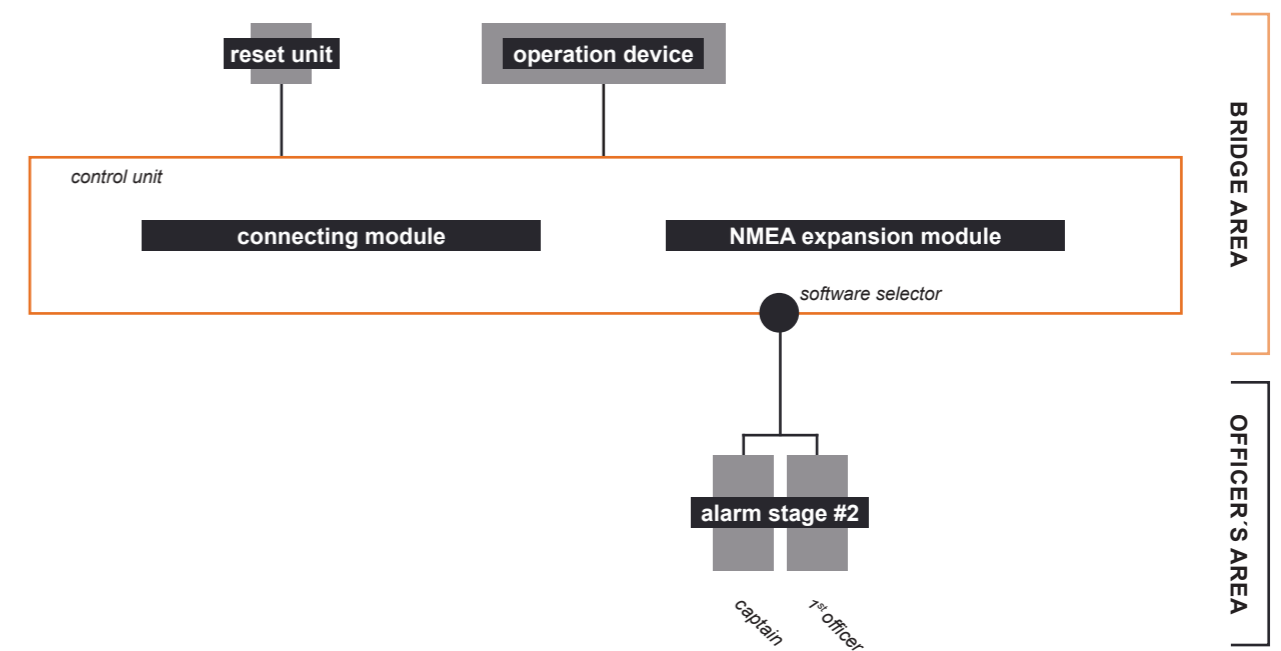
SAMPLE SYSTEM **medium vessels**



in- / outputs of the console



SAMPLE SYSTEM **small vessels**



ADDITIONAL INFORMATION

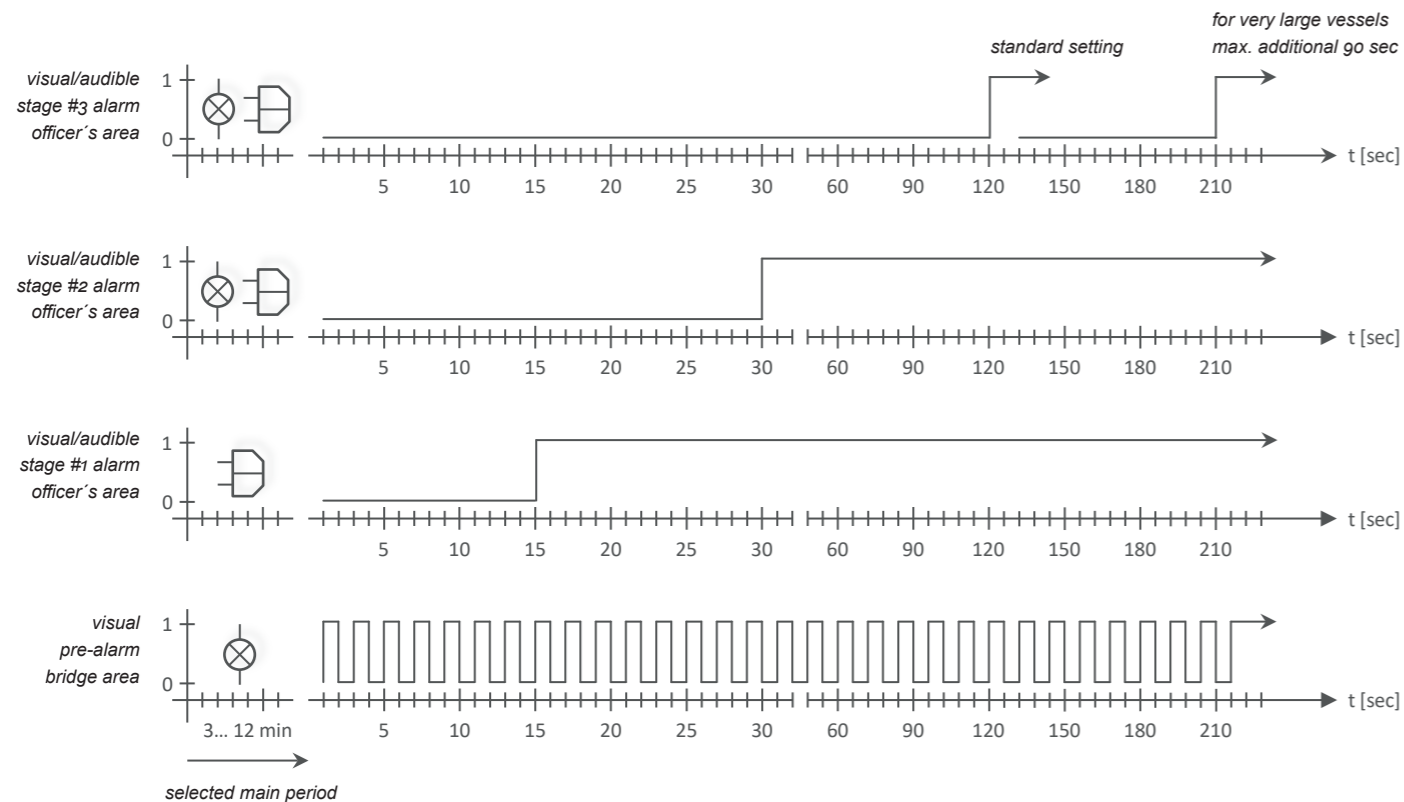
MSC 86

A Bridge Navigational Watch Alarm System (BNWAS) has to be installed as follows:

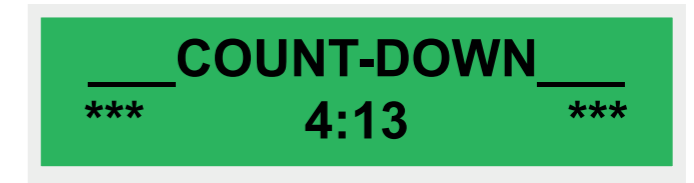
legal background

- Ships of 150 gross tonnage and upwards and passenger ships irrespective of size constructed on or after 1st July 2011;
- Passenger ships irrespective of size constructed 1st July 2011, not later than first survey after 1st July 2011;
- Ships of 3,000 gross tonnage and upwards constructed before 1st July 2011, not later than the first survey after 1st July 2012;
- Ships of 500 gross tonnage and upwards but less than 3,000 gross tonnage constructed before 1st July 2011, not later than the first survey after 1st July 2013;
- Ships of 150 gross tonnage and upwards but less than 500 gross tonnage constructed before 1st July 2011, not later than the first survey after 1st July 2014;

TIME TABLE



ALARM STATES



non alarm condition

PERIPHERY EQUIPMENT

WATCH ALARM SYSTEM *basic*

771170



BNWAS | le guardian 2025

- le guardian 2025 connecting module LCM 210.24.0.0
- le guardian 2025 operating device LOD 210.24.0.0
- 15 pole system cable, l=3m



NMEA EXPANSION MODULE

771172



BNWAS | NMEA 210.24.0.0

- incl. software selector switch for selectable stage #2 alarm
- NMEA interface to VDR
- NMEA interface to BAM/CAM

WATCH ALARM RESET

770040



BNWAS | WAR 220.1.0.0

- illuminated (dimnable)
- push button
- 24 VDC power supply
- IP 67

ALARM PANEL STAGE #2

770107



BNWAS | WAP 220.2.0.0

- alarm for officer's cabin with buzzer
- flush mounted
- 24 VDC power supply
- IP 23; 80 dB(A)

PERIPHERY EQUIPMENT

ALARM PANEL STAGE #3

770106



BNWAS | WAP 220.4.0.0

- for officer's area (corridor)
- triangle light & sounder 64-111 dB(A)
- 24 VDC power supply
- IP 65

STAGE #1 ALARM EXTERNAL BUZZER

770117



BNWAS | WAB 220.2.0.0

- 85 dB(A)
- 24 VDC power supply
- IP 65
- installation hole 22,5mm

WATCH ALARM RESET WALL BOX

770041



BNWAS | WAR.220.2.0.0

- 24 VDC power supply
- IP 65
- dimension 122 x 122 x 90mm
- M32 x 1,5 cable gland

STAGE #1 ALARM RESET WALL BOX *with buzzer*

770045



BNWAS | WAR 220.2.1.0

- 24 VDC power supply
- IP 65; 85 dB(A)
- dimension 122 x 122 x 90mm
- M32 x 1,5 cable gland

FAILURE ALARM PANEL

770423



BNWAS | FAP 220.1.0.0

- incl. test/reset facility
- 24 VDC power supply
- buzzer 85 dB(A)

ILLUMINATED RESET P/B *with wall box*

770429

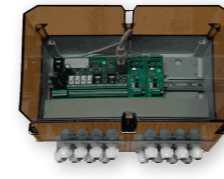


BNWAS | WAR 220.3.0.0

- IP 23 (indoor)
- connecting type: terminal block

WALL BOX FOR LCM

770317



BNWAS | WBC 210.1.0.0

- 360 x 250 x 165mm
- IP 23
- 16ea M25 cable glands

WATCH ALARM BOX *with buzzer*

770051



BNWAS | WAB 220.1.0.0

- 24 VDC
- IP 65
- 85 dB(A)

WATCH ALARM RESET *illuminated push button*

770119



BNWAS | WNAR 220.1.0.1

- 24 VDC
- IP 23
- connecting type: screws

PIR MOTION SENSOR

770305



BNWAS | WMS 220.2.0.0

- with swivel bracket
- incl. electronic module

STAGE #2 ALARM PANEL

770318



BNWAS | WAP 220.5.0.0

- for officer's cabin with buzzer
- 85 dB(A)
- bulkhead mounted
- 24 VDC + IP 23

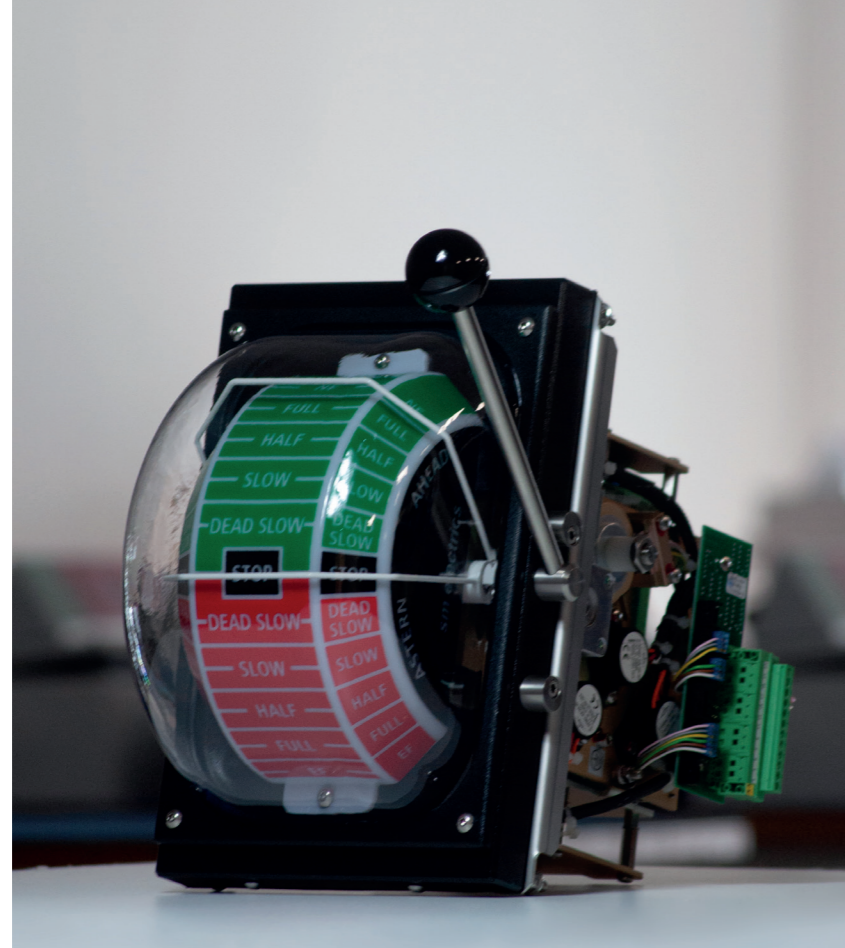
SWIVEL MOUNTING BRACKET

770309



BNWAS | WMB 210.1.0.0

- for operating device
- attachment on desk/wall/ceiling



ENGINE ORDER TELEGRAPH

EOT

sm electrics' Engine Order Telegraph (EOT) formerly designed and distributed by Stein Sohn respectively Interschalt represent the embodiment of safe and sustained μ P controlled human machine interface as a basic part of the connected remote propulsion system.

Type approved by major classification societies the equipment is available for various control application. The highly integrated system is administrating a single interface to the potential propulsion system by high-precision shock resistant potentiometer, contact-free optical current transmitter or other defined physical interface unit. The well established μ P controlled "Electrical Shaft" allows a secure Bridge FWD EOT's remote control by corresponding lever controller located typically on the Bridge Wings and/or Bridge AFT.



APPLICATION

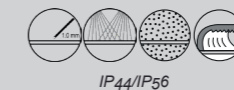
system diagnosis via LCD
type approved by all major classes
serial VDR interface

The main purpose of sm electrics' Engine Order Telegraph system is to generate the desired RPM or pitch value for the connected propulsion remote control system by a sustained and reliable lever – known as well as human machine interface (HMI).

In case the connected propulsion remote control system is disturbed the engine order telegraph system is in use to transfer manoeuvre commands to the engine control room or, if required, directly to the engine room's ME local station. The given manoeuvre command activates an audible alarm as long as the command has been accepted by corresponding operation at the connected participants.

The modular system structure allows to extend the system by wing control units. All telegraphs located on the bridge e.g. bridge FWD, bridge AFT, wing SB, wing PS are connected to each other by a virtual mechanical shaft to make them work synchronously. That virtual shaft is called Electrical Shaft and operates as a remote control of the main bridge FWD telegraph which is providing the main interface to the connected propulsion remote control system.

The centralized A067 mt-Bus controller, mostly located inside the engine control room console, controls and monitors all network participants and provides further interface signals for ER call, VDR and connected IAMC systems.



IP44/IP56



system voltage:
24 DCV nominal



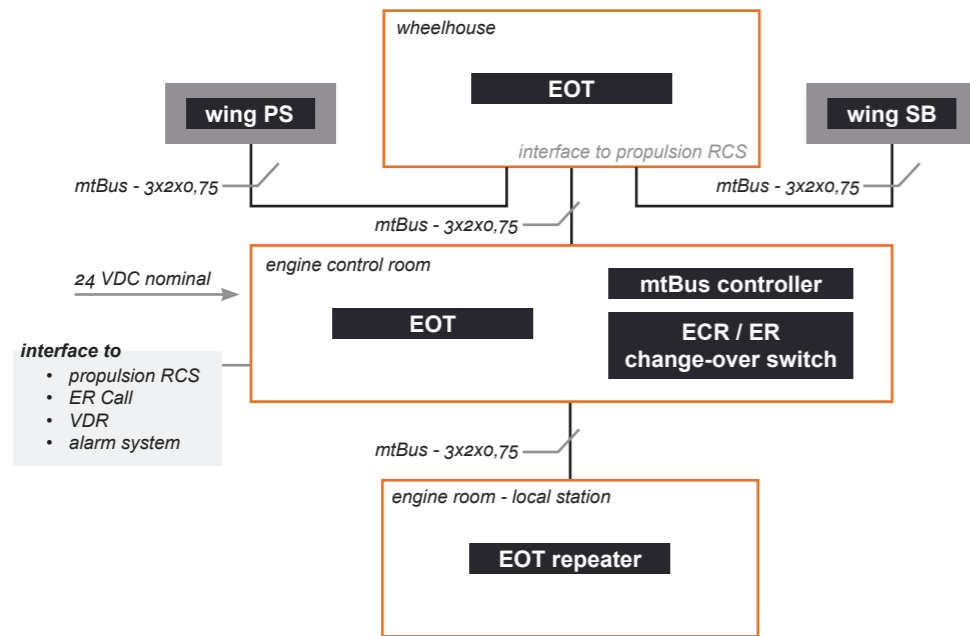
VDR interface acc. to
IEC 61162-2

DATA & FEATURES

- A067 mtBUS RS485 control
- two handle types and two unit sizes available
- double EOT for twin main engine control available
- various interface technologies to propulsion RCS
- all environmental tests min. acc. IEC 60945
- full operation EOT repeater for ME local station
- type approved by: DNV-GL, RMRS

EOT

TYPICAL SYSTEM COMPOSITION



PERIPHERY EQUIPMENT

SMALL CONTROL LEVER

2080099588

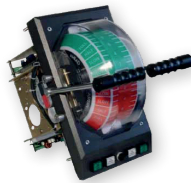


EOT | A067.1252-000-0111

- dimension: h190 x w130 x d200mm
- IP56 (front)
- electrical shaft operation

DOUBLE CONTROL LEVER FOR WING CONSOLE

2080100150

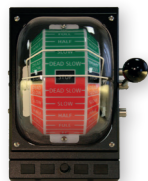


EOT | A067.3252-000-0211

- dimension: h190 x w130 x d200mm
- IP56 (front)
- 2x electrical shaft

EOT BRIDGE LEVER

2080100641



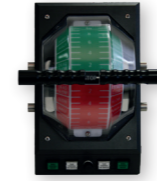
EOT | A067.2313-431-0111

- dimension: h324 x w192 x d200mm
- IP56 (front)
- electrical shaft operation

PERIPHERY EQUIPMENT

DOUBLE EOT BRIDGE LEVER

2080100356

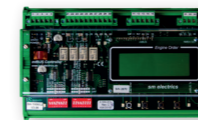


EOT | A067.4343-431-0211

- dimension: h324 x w192 x d200mm
- IP56 (front)
- 2x electrical shaft operation

mtBUS CONTROLLER

2000103003



EOT | A067.74

- with VDR interface
- 24 VDC nominal

CHANGE OVER SWITCH

2030403002



EOT | A067.T0-8221e

- ECR/ER command change over
- 48 x 48mm
- double pole double throw (DPDT)

EOT/EEOT RECEIVER ER *with wall box*

2080100453



EOT | A067.5032-100-0140

- dimension: h300 x w316 x d135
- IP56 (front)
- incl. call bell

EOT RECEIVER ER *with wall box*

2000104996



EOT | A067.5034-100-0120

- dimension: h262 x w222 x d146mm
- IP56 (front)
- ø180mm scale

contact for project specific requests

Due to the scalable system with various numbers of expansion stages, operational features and interfaces to the potential main engine remote control system, a specific request is required. Kindly provide as much details as possible during your requiring email, making us able to provide a qualified offer in due time.

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www.sm-electrics.de

PERIPHERY EQUIPMENT

REPLACEMENT KIT *control PCB for all A067 EOT types* 2080101151



EOT | PCB E551.2

- PCB E551.2
- connection cable
- replacement instruction
- cover plate

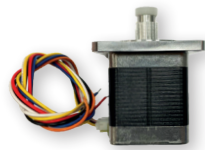
REPLACEMENT KIT 2200000175



EOT | PCB E551.3

- PCB E551.3
- connection cable
- replacement instruction
- cover plate

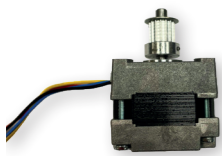
MODULE, STEPPER MOTOR 2033000400



EOT | PCB E551.2

- with synchro wheel 17/24 (lever side)

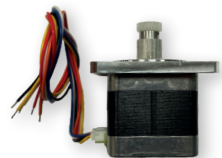
MODULE, STEPPER MOTOR 2080101070



EOT | SH4018S0406-A (SHS 39/200-1670)

- with synchro wheel 15 teeth (pointer side)

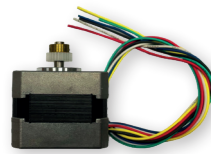
MODULE, STEPPER MOTOR 2033000396



EOT | PH264-02

- with synchro wheel 17/24 (small wing EOT)

MODULE, STEPPER MOTOR 2030299032



EOT | PK243

- with gear wheel 24 teeth

POTENTIOMETER 2KΩ HIGH PRECISION *(for RCS interface)* 2080101173



EOT | PW620-19d

- with synchro wheel 51

POTENTIOMETER 500Ω HIGH PRECISION *(for RCS interface)* 2080101238



EOT | PW620-19d

- with synchro wheel 51

POTENTIOMETER 5KΩ LIN=0,3% 2080101074



EOT | SP2803

- with 51t for EOT lever desired value

REPAIR KIT FOR POINTER BELT 2000106263



EOT |

- l=330mm

REPAIR KIT FOR POINTER BELT 2000106262



EOT |

- l=230mm

PERIPHERY EQUIPMENT

TOOTH BELT

2019999313



- b=6
- T2
- 5/177,5mm

2019999314



- b=6
- T2
- 5/230mm

2019999315



- b=6
- T2
- 5/305mm

2019999316



- b=6
- T2
- 5/330mm

2019999317



- b=6
- T2
- 5/380mm

2019999318



- b=6
- T2
- 5/480mm

2019999319



- b=6
- T2
- 5/540mm

2019999320



- b=6
- T2
- 5/620mm

MICROSWITCH (COMPLETE 1-FOLD ASSEMBLY)

2200000250



EOT |

- including connection cable

MICROSWITCH (COMPLETE 2-FOLD ASSEMBLY)

2200000181



EOT |

- including connection cable

MICROSWITCH (COMPLETE 3-FOLD ASSEMBLY)

2200000259



EOT |

- including connection cable

MICROSWITCH (COMPLETE 4-FOLD ASSEMBLY)

2200000056



EOT |

- including connection cable

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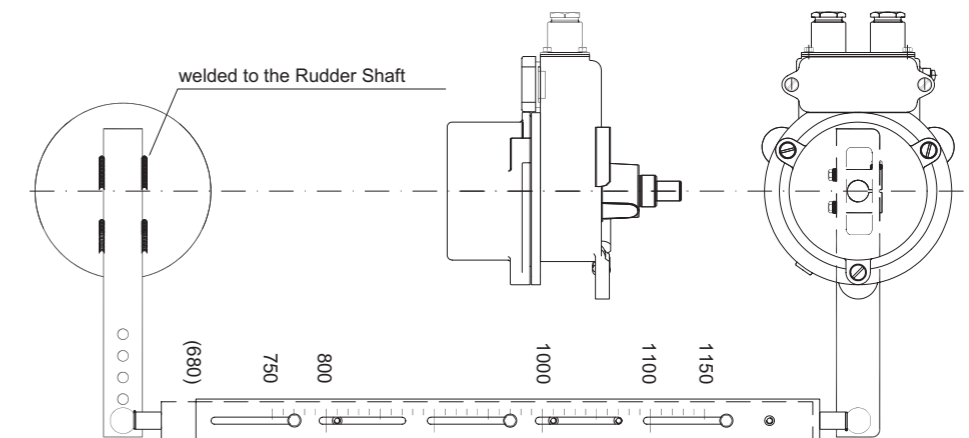
RUDDER ANGLE INDICATOR

RAI

Picking up and carry on the tradition of HAGENUK, Stein Sohn and Interschalt as rudder angle indication systems provider, deeply established into the market under the brand name „A070“, sm electrics is covering all required equipment. Rock solid transmitter technology as well as diversified indicator family are available as spare part requests just as well as full system replacements.



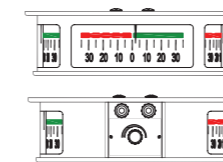
lever drive ruddershaft with rudder angle indication transmitter



PERIPHERY EQUIPMENT

RUDDER ANGLE INDICATION

2080101042

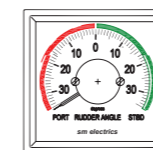


RAI | A070.718-99xxx

- \varnothing 400mm x 120mm
- 24VDC
- signal: 4-20mA; angle range: $\pm 35^\circ/\pm 45^\circ$ (further angle ranges on request)
- IP 66

RUDDER ANGLE INDICATOR *desk mounting*

2080101025



RAI | A070.752-98xxx

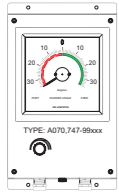
- 24VDC power supply
- 96 x 96mm
- signal: 4-20mA, load 27 Ω , angle range: $\pm 35^\circ/\pm 45^\circ$ (further angle ranges on request)
- IP 23

RAI

PERIPHERY EQUIPMENT

RUDDER ANGLE INDICATOR *wall mounting*

2080101036



RAI | A070.754-99xxx

- 24VDC power supply
- signal: 4-20mA, angle range: $\pm 35^\circ/\pm 45$ (further angle ranges on request)
- IP 66

RUDDER ANGLE INDICATOR *wall mounting*

2080101038

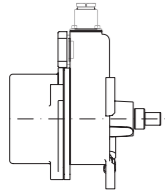


RAI | A070.754-99xxx

- 24VDC power supply
- signal: 4-20mA, angle range: $\pm 35^\circ/\pm 45$ (further angle ranges on request)
- IP 66

RUDDER ANGLE INDICATION TRANSMITTER

2080099267

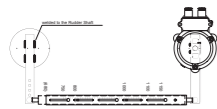


RAI | A070.300-xx0xx

- 24VDC power supply
- signal: 4-20mA, angle range: $\pm 35^\circ/\pm 45$ (further angle ranges on request)
- IP 67

LEVER DRIVE RUDDERSHAFT - TRANSMITTER

2019999322

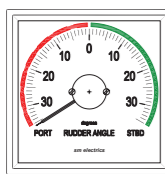


RAI | A070.030-00000

- 285/600 - 800/285mm adjustable

RUDDER ANGLE INDICATOR *desk mounting*

2200000058



RAI | A070.754-98xxx

- 24VDC power supply
- 144 x 144mm
- signal: 4-20mA, load 27 Ω , angle range: $\pm 35^\circ/\pm 45$ (further angle ranges on request)
- IP 66



sm electrics

SERVICES

engineering & contract manufacturing

From the beginning sm electrics` individual skills in modern and flexible engineering, manufacturing and purchasing has been offered to the market and made use of our clients. These services have been of use for timely limited single projects as well as for long term partnerships over decades.

design of electrical & mechanical components

- circuit design
- PCB design
- software development
- rapid prototyping
- test equipment manufacturing

assembly of electrical cabinets and systems

- project specific purchasing
- construction
- wiring work

partial and final assembly of electrical & mechanical systems

- soldering work
- final assembly of electrical systems
- testing and documentation
- small series and batch production

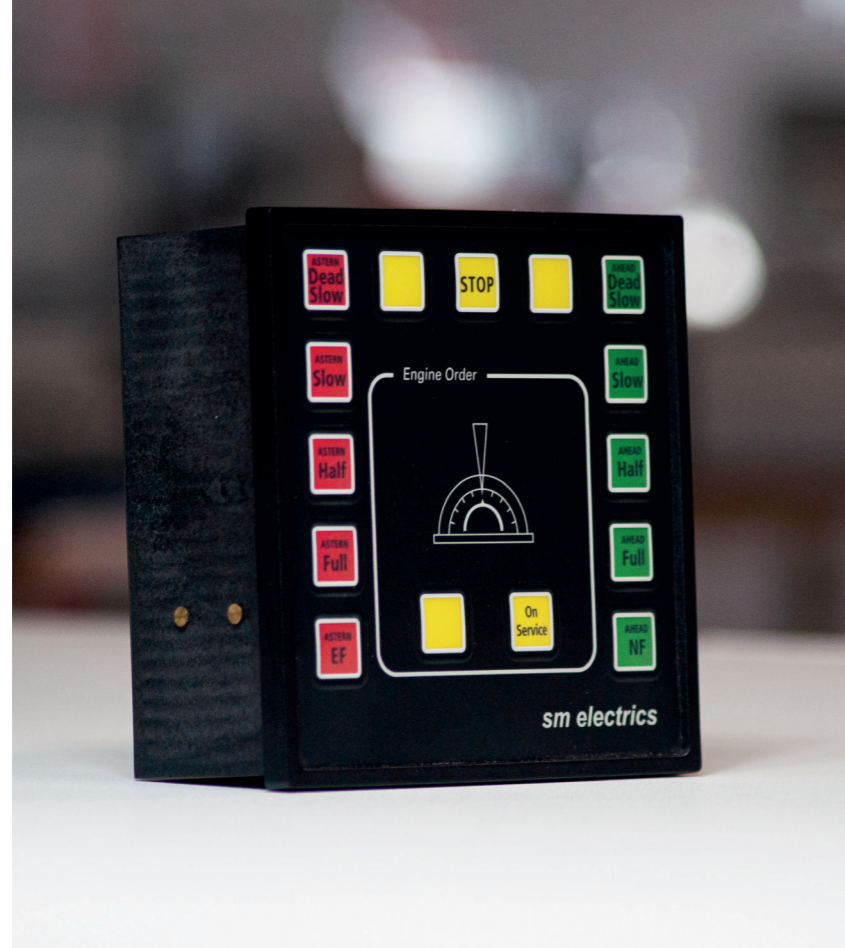
cable assembly

- cable harnesses
- connector assembly
- connecting cables

sm electrics GmbH

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24217 Schönberg
+49 4344 819 23 10
info@sm-electrics.de
www.sm-electrics.de





EMERGENCY ENGINE ORDER TELEGRAPH

EEOT (Push Button Telegraph)

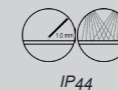
The main purpose of sm electrics' Emergency Engine Order Telegraph system is to operate as the last back-up manoeuvre command transmission system, in case the classical propulsion remote control system and its backup mechanism fail. In such emergency case the em'cy engine order telegraph system is in use to transfer manoeuvre commands to the engine control room or, if required, directly to the engine room's ME local station. The by push buttons given manoeuvre command activates a visual and audible alarm as long as the command has been accepted by corresponding operation at the selected participants. The centralized A067 mt-Bus controller, mostly located inside the engine control room console, controls and monitors all network participants and provides further interface signals for ER call, VDR and connected IAMC systems.



APPLICATION

- system diagnosis via LCD**
- type approved by major classes**
- simplified ship cable topology**
- serial VDR interface**

As the core element, the sm electrics' A067 mtBUS controller is designed to manage and monitor permanently all connected network units. Simply to be mounted on a terminal rail (TS35) the controller provides useful system information to the commissioning, service and maintenance staff indicated clearly on a 4 lines 20 characters LC display. Following interface signals are provided: Wrong-way contacts, working with a corresponding set of propulsion system contacts generating an alarm in case the given manoeuvre command and the current propulsion direction (propeller shaft or propeller pitch) do not correspond. EOT Call contact, causing the audible and/or visual alarm means to be activated in case the two connected EOT parties' manoeuvre command do not correspond. Failure contact, causing an alarm to be transferred to the connected IAMC system or Bridge Alert Management system in case the mtBUS controller detects an abnormal system situation. Serial VDR interface, RS 485, 2-wire / 3-wire uni-directional connection to VDR/S-VDR system acc. to IEC 61162-2



IP44



system voltage:
24 DCV nominal



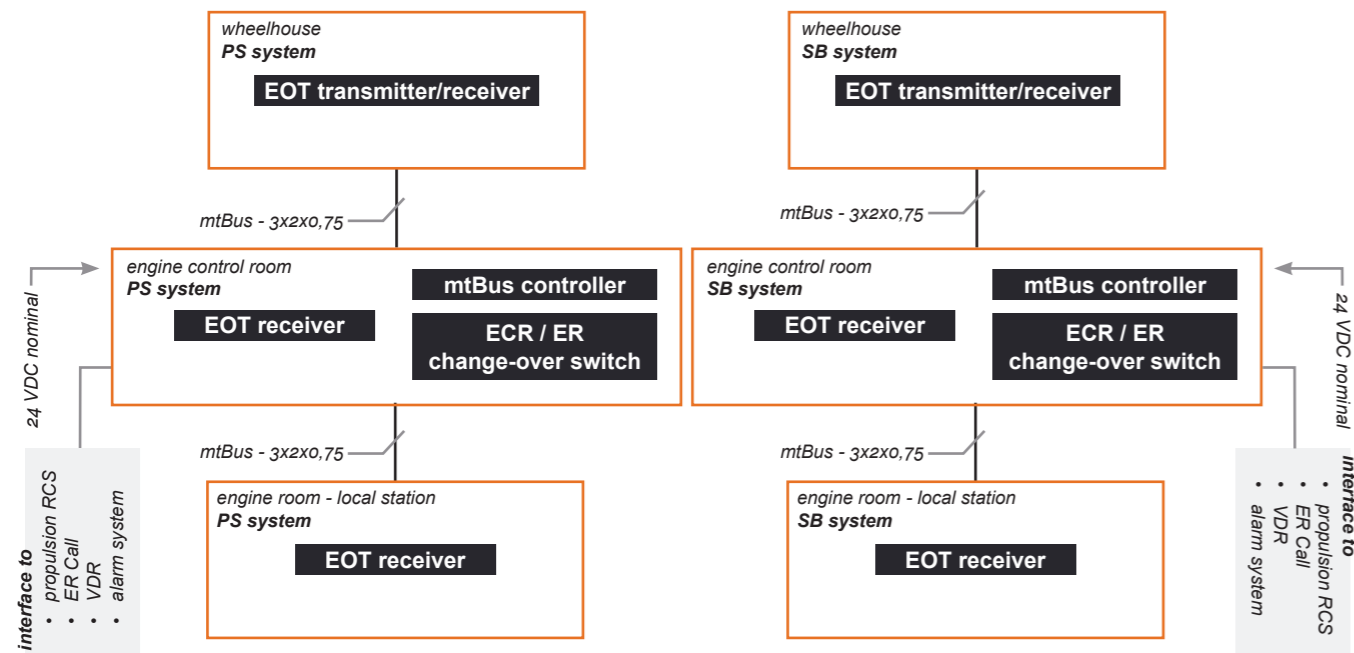
VDR interface acc. to
IEC 61162-2

DATA & FEATURES

- A067 mtBUS RS485 control
- operation for twin main engine control available
- interface to propulsion RCS and IAMCS
- interface to propulsion RCS and IAMCS
- all environmental tests min. acc. IEC 60945
- full operation EEOT repeater for ME local station
- type approved by: DNV-GL, RMRS

EEOT

TYPICAL SYSTEM COMPOSITION



PERIPHERY EQUIPMENT

mtBus controller

sm electrics' A067 mtBUS controller is designed to manage and monitor permanently all connected network units. Simply to be mounted on a terminal rail (TS35) the controller provides useful system information to the commissioning, service and maintenance staff indicated clearly on a 4 lines 20 characters LC display.

Following interface signals are provided:

Wrong-way contacts, working with a corresponding set of propulsion system contacts generating an alarm in case the given manoeuvre command and the current propulsion direction (propeller shaft or propeller pitch) do not correspond.

EOT Call contact, causing the audible and/or visual alarm means to be activated in case the two connected EOT parties' manoeuvre command do not correspond.

Failure contact, causing an alarm to be transferred to the connected IAMC system or Bridge Alert Management system in case the mtBUS controller detects an abnormal system situation.

Serial VDR interface, RS 485, 2-wire / 3-wire uni-directional connection to VDR/S-VDR system acc. to IEC 61162-2.

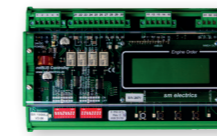
Performance characteristics:

- well established and sustained RS485 bi-directional mtBus technology
- system voltage: 24VDC nominal
- power consumption: 2-3W
- to be installed on TS35 terminal rail
- LC display with 20 characters in 4 lines for system diagnosis
- VDR connection baud rate selectable 4.800 to 38.400bit/s
- Wrong-way contacts (dry relay contacts)
- EOT Call alarm (dry n/o relay contact)
- Failure contact (dry n/c relay contact)

PERIPHERY EQUIPMENT

mtBUS CONTROLLER

2000103003



EOT | A067.74

- with VDR interface
- 24 VDC nominal

operation units

sm electrics' Emergency Engine Order Telegraph units installed as console mounting version on bridge with silk printed high resistant foil are available with eleven or thirteen manoeuvre command push buttons incl. a precise night vision design. The manoeuvre commands sent from bridge will be indicated as a visual/audible alarm on the corresponding receiver units located traditionally at the engine control room respectively, if required, at the ME local station. The alarms have to be acknowledged accordingly. The acknowledgement will be transferred to the bridge as a responding action.

At the ME local station the push button repeater version is finally installed into a matching wall box incl. alarm bell.

Performance characteristics:

- system voltage: 24 VDC nominal
- all languages available
- protection rating: IP 44

TELEGRAPH TRANSMITTER WH

2080099585



EOT | A067.5011-000-0700

- desk mounting
- 144 x 144 mm

TELEGRAPH RECEIVER ECR

2080101154



EOT | A067.5021-000-0700

- desk mounting
- 144 x 144 mm

TELEGRAPH RECEIVER ER with bell

2080101236



EOT | A067.5032-100-0740

- in wall box
- with bell
- dimension: h300 x w316 x d135

PERIPHERY EQUIPMENT

TELEGRAPH RECEIVER *ER without bell*

2080101290



EOT | A067.5032-000-0740

- dimension: h300 x w200 x d135
- without bell
- in wall box

ALARM BELL

2080099478



EOT | A060.9-00024

- IP55
- ø 105 mm
- 24 VDC
- RAL 7001

ALARM BUZZER

999593



EOT | BUZ-TS35

- 24 VDC
- 85 dB
- DIN-Rail mounted (TS35)
- single hole mounted (28,5mm)

CHANGE OVER SWITCH

2030403002



EOT | A067.T0-8221e

- ECR/R command change over
- 48 x 48mm
- double pole double throw (DPDT)

ALARM DEVICE

760093



EOT | LSD 208.1.0.A

- triangular LED light & sounder
- 24 VDC
- adjustable sound level (67 up to 112dB(A))



HOSPITAL CALL SYSTEM

HOCS

That highly standardized and modular system is based on a certified 4,3" full graphic touch panel with tight PLC TS35 terminal rail module. Up to six calling points will be monitored and clearly indicated including escalating alarm devices and interface to the higher-ranking BAM/CAM system. The system has been designed with 230VAC main and 24VDC back-up supply.

made
in
Germany

750151



Hospital Call System
main station

750154



HOCS alarm panel

750153



HOCS pear push button
(L=3m)

750152



HOCS pear push button
socket with patience lamp

750155



HOCS alarm cabin panel
(resettable)

HOCS



TELEGRAPH LOGGER

TLO

The sm electrics telegraph logger has been designed to replace an outdated bell logger (command printer). The command list of the telegraph logger is able to represent up to 60000 commands, before the list gets refreshed. The telegraph logger will periodically execute an internal backup off the command list which will be exported to an excel sheet. All files are named with the specific timestamp and kept in an internal system folder. In order to export all stored files from the telegraph logger to an external USB storage, the user interface provides a USB backup button. With single action, the telegraph logger will create a new excel sheet with the latest manoeuvre and then export all files automatically to the mounted pen drive. Moreover, the telegraph logger provides a password protected settings menu to change the description of each lever location and the current UTC offset. In order to open the on-device user manual, a specific button is located on the user interface.



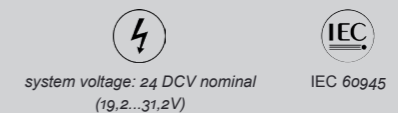
APPLICATION

- binary inputs**
- various analog inputs**
- NMEA inputs**

The TLO has been designed to indicate on a 15,6" 9:16 (upright) coloured touch panel PC the given manoeuvre commands from Bridge Telegraph unit as well as the responded commands from Engine Room Telegraph. Each command is shown in a single line with a time stamp clearly indicated what telegraph has been represented. Moreover, the telegraph logger plus can read binary inputs and analog inputs (e.g. PT100, 0-10V, Resistor) from its external IO modules. All input channels can be individually adapted to specific requirements within the on-screen menu.

Around 35 lines fill a screen. The latest command is shown on the bottom of the screen. In case older commands shall be displayed, the built-in scroll function can be used. A defined number of total commands are available on the screen.

The telegraph logger is connected to the A067 mtbus controller and is sending a full system state telegram to the VDR every time the system state changes or the time interval of 10s expires. That NMEA telegram is linked to the telegraph logger as RS422 serial communication. The logger is analysing permanently the telegram and is generating a new line on the display only in case a telegraph manoeuvre command has been given and the state hasn't been changed within the last three seconds or one of the external analog/binary inputs changes its state within the defined range.

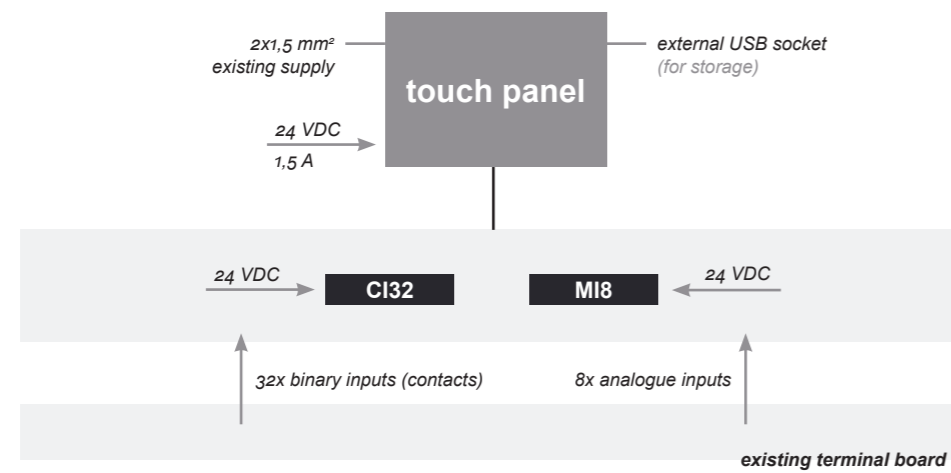


DATA & FEATURES

- Coloured full graphic touch panel PC (255x404x83mm – upright - 2,85kg - fanless)
- modern SSD storage technology
- Power consumption: max. 37,5W (1,5Amp)
- On-device user manual available for immediate user support
- Single action storage to USB flash drive (long term storage)
- Black-out-safe operation

TLO

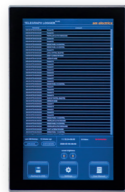
TYPICAL SYSTEM COMPOSITION



PERIPHERY EQUIPMENT

TELEGRAPH LOGGER *Plus*

991439



TLO | TLO PLUS 210.24.0.0

- 15,6" touch panel PC
- inclusive IO module
- NMEA input
- 32 binary inputs, 8 analogue value inputs

ADDITIONAL INPUTS



TLO

- analogue inputs available (4 - 20mA, 0 - 10V, PT100, resistor/potentiometer, etc.)
- binary inputs available

adjustments

Via a password protected time setting menu the operator is able to adjust the system time very easily. The time stamp is based upon that system time.

The TLO plus is generating an XLS file (.XLS) within a defined period of time, stored on a modern internal „solid state drive“. In order to export all stored files from the telegraph logger to an external USB storage, the user interface provides a USB backup button. Once pressed, the TLO will export all files to the mounted pen drive.

MISCELLANEOUS PRODUCTS

770995



Alarm Bell 155 Ø

- 230 VAC
- IP 21

771037



Alarm Bell 155 Ø

- 24 VDC
- IP 21

770996



Alarm Bell 168 Ø

- 230 VAC
- IP 66

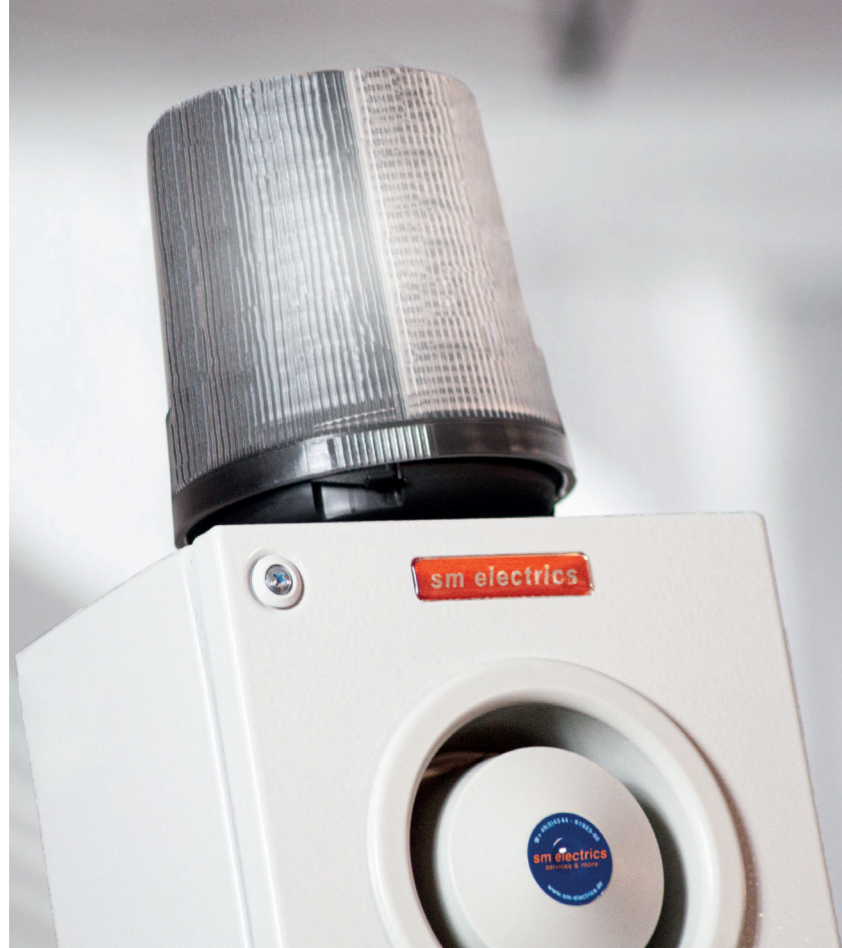
771039



Alarm Bell 168 Ø

- 24 VDC
- IP 66

made
in
Germany



SIGNAL LIGHT COLUMN

LSAS

The signal light column is a mini-PLC based stand-alone, shipborne alarm system to indicate visual and audible alarms according to IMO regulations as well as classification society requirements (e.g. SRtP - Safe Return to Port). Controlled by a central unit the signal light column alarm system can also be adapted to your existing alarm and monitoring logic. The MED type approved sound generation is based on an innovative microprocessor technology and offers multiple acoustic philosophies with up to 120dB(A) sound level.



APPLICATION

compact design of control unit

easy to install

digital sound processing

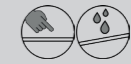
On one hand visual alarms are indicated by in-house developed LED strobe lights and on the other hand explicit symbols on LED triangular indicators are advising the specific alert type. A standard signal light column consists of six to ten alarm indicators (symbols). In case a different amount of alarm indicators is needed, the signal light column can easily be adapted to your specific requirements.



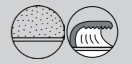
MED type approved



only one power supply required:
230VAC/115VAC/24VDC



IP22



IP66
(with wallbox)

DATA & FEATURES *(control unit)*

- only one power supply 230VAC, 115VAC or 24VDC is required
- clever commissioning and test features reduce start-up work
- individual acoustics delay settings adjustable by user
- compact design (482x320mm, weight: 5,56kg, IP20)
- suitable wall box is available (600x380x210mm, IP66)
- max. output current: 1,25A (each channel)
- external wiring type: max. 2,5mm²
- numbers of controlled LSDs: unlimited
- interface to corresponding systems: dry contacts required (24VDC / 50mA)

LSAS

IN A NEW LIGHT

LIGHT SIGNAL COLUMN

**NEW STROBE LIGHT
NEW SOUNDER**



The story behind the product.

The journey of our signal light column started in 2002. Until today we have constantly improved our product in terms of functionality and reliability.

After roughly 3.000 sold systems with about 30.000 signal light columns, we have gained significant insights about what is important. Based on the acquired knowledge from our long-term experience, we developed our own flash light and MED certified sounder, which allow us to meet any kind of upcoming requirements.



New Strobe Light

By developing our new warning light for the Light Signal Column we created some unique advantages:

- Lower system prices, because only one single light is needed
- Ability to display 7 different colors and 4 different flash sequences
- Low costs for potential spare parts, because of the reduced number of luminaires
- Better signaling effect thanks to smart lens arrangement and high performance LED's
- Lower operating costs result from low power consumption (up to minus 85%) and more flexible system topologies as the overall system power consumption decreases
- Expanded product life cycle due to advanced LED technology and intelligent control
- Different flash sequences allow individual adjustments if there are other devices with a similar flash sequence
- In contrast to conventional filament bulbs, there is no susceptibility to vibration and shock

New Sounder

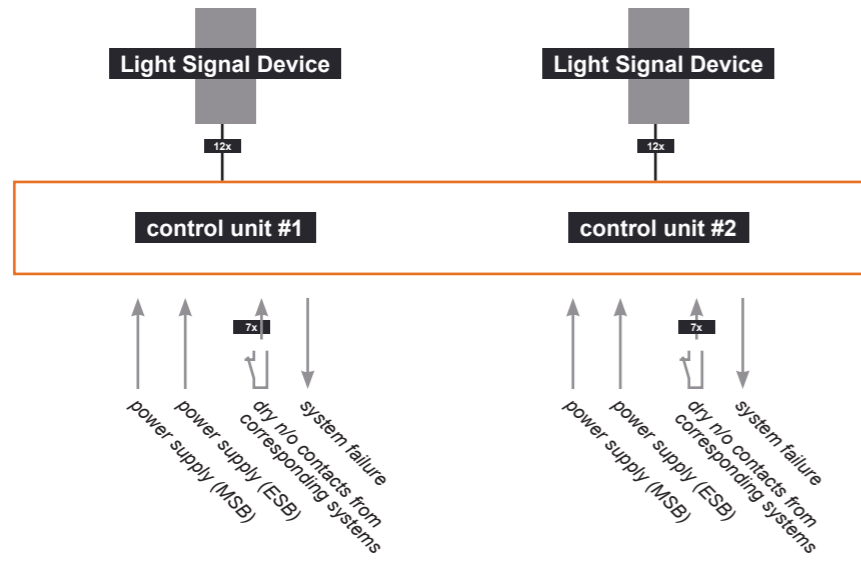
The MED and EN54-3 certified AGM 410.1.8.2 has been designed to generate alarm sound for various marine applications. The main field of application is the ship's engine room. An alarm sound will be generated by applying 230VAC to the specific alarm input (CH#1-CH#8) and the enable input. In case more than one alarm sound is activated at the same time, the alarm sound with the higher priority will be generated (CH#1 highest priority, CH#8 lowest priority).

The specific sound characteristic of each alarm input can be modified within a protected service settings menu. The alarm sounds can be chosen from a variety of 64 different maritime sound characteristics. The sounder also includes various smart features, such as a sound soft start for safety at work.



TYPICAL SYSTEM COMPOSITION

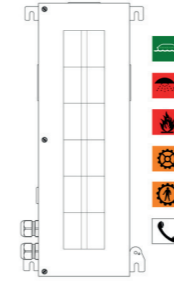
dual control unit application to meet SRtP requirements



PERIPHERY EQUIPMENT

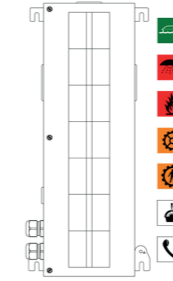
LSD STANDARD COLUMNS*

LSD 209.62.0.0x0



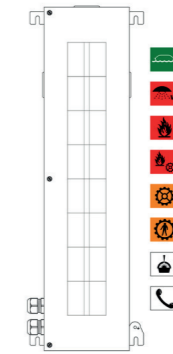
- No. of LED triangular lights: 6
- No. of LED strobe lights: 0
- sound module integrated: NO
- IP class: 55

LSD 209.72.0.0x0



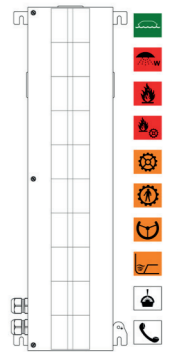
- No. of LED triangular lights: 7
- No. of LED strobe lights: 0
- sound module integrated: NO
- IP class: 55

LSD 209.82.0.0x0



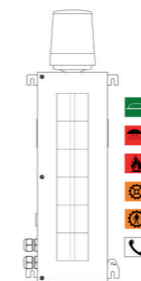
- No. of LED triangular lights: 8
- No. of LED strobe lights: 0
- sound module integrated: NO
- IP class: 55

LSD 209.102.0.0x0



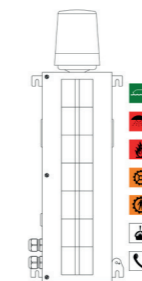
- No. of LED triangular lights: 10
- No. of LED strobe lights: 0
- sound module integrated: NO
- IP class: 55

LSD 209.62.12.0x0



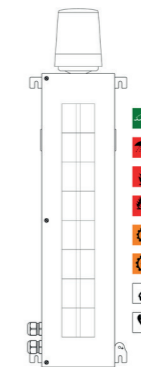
- No. of LED triangular lights: 6
- No. of LED strobe lights (clear): 1
- sound module integrated: NO
- IP class: 55

LSD 209.72.12.0x0



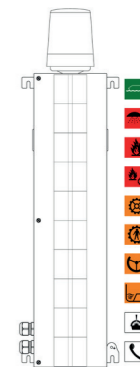
- No. of LED triangular lights: 7
- No. of LED strobe lights (clear): 1
- sound module integrated: NO
- IP class: 55

LSD 209.82.12.0x0



- No. of LED triangular lights: 8
- No. of LED strobe lights (clear): 1
- sound module integrated: NO
- IP class: 55

LSD 209.102.12.0x0

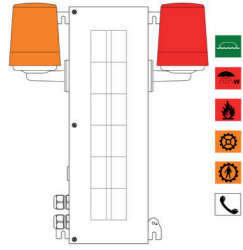


- No. of LED triangular lights: 10
- No. of LED strobe lights (clear): 1
- sound module integrated: NO
- IP class: 55

*available in 115VAC, 230VAC, 24VDC

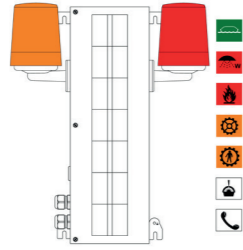
PERIPHERY EQUIPMENT

LSD 209.62.22.0x0



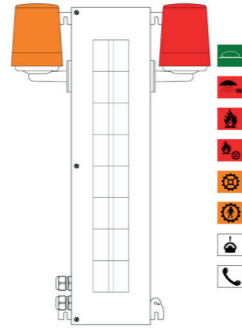
- No. of LED triangular lights: 6
- No. of LED strobe lights: 2
- sound module integrated: NO
- IP class: 55

LSD 209.72.22.0x0



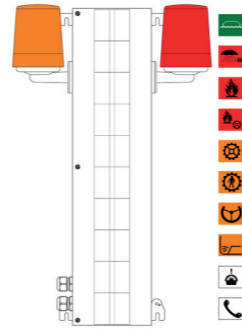
- No. of LED triangular lights: 7
- No. of LED strobe lights: 2
- sound module integrated: NO
- IP class: 55

LSD 209.82.22.0x0



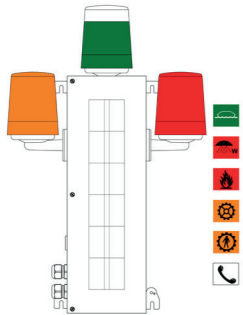
- No. of LED triangular lights: 8
- No. of LED strobe lights: 2
- sound module integrated: NO
- IP class: 55

LSD 209.102.22.0x0



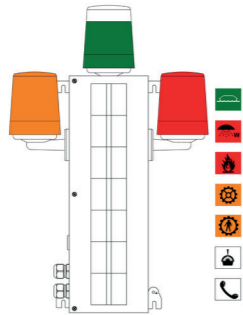
- No. of LED triangular lights: 10
- No. of LED strobe lights: 2
- sound module integrated: NO
- IP class: 55

LSD 209.62.32.0x0



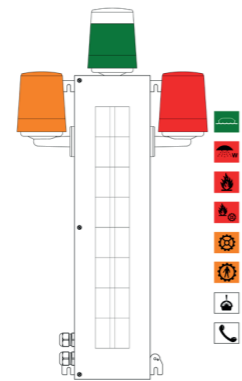
- No. of LED triangular lights: 6
- No. of LED strobe lights: 3
- sound module integrated: NO
- IP class: 55

LSD 209.72.32.0x0



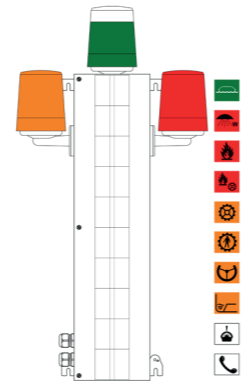
- No. of LED triangular lights: 7
- No. of LED strobe lights: 3
- sound module integrated: NO
- IP class: 55

LSD 209.82.32.0x0



- No. of LED triangular lights: 8
- No. of LED strobe lights: 3
- sound module integrated: NO
- IP class: 55

LSD 209.102.32.0x0

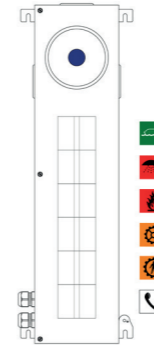


- No. of LED triangular lights: 10
- No. of LED strobe lights: 3
- sound module integrated: NO
- IP class: 55



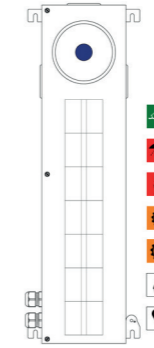
LSD COLUMNS WITH MED TYPE APPROVED MULTI-TONE SOUNDER*

LSD 313.62.0.1x1



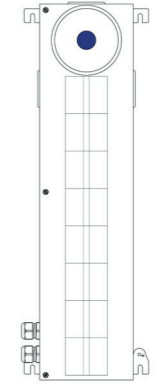
- No. of LED triangular lights: 6
- No. of LED strobe lights: 0
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.72.0.1x1



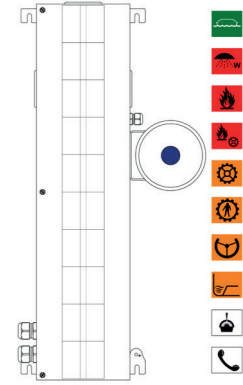
- No. of LED triangular lights: 7
- No. of LED strobe lights: 0
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.82.0.1x1



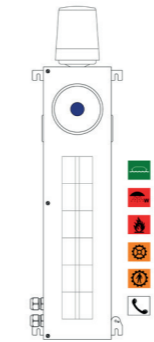
- No. of LED triangular lights: 8
- No. of LED strobe lights: 0
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.102.0.1x1



- No. of LED triangular lights: 10
- No. of LED strobe lights: 0
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.62.12.1x1



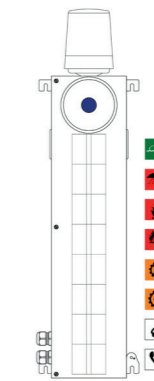
- No. of LED triangular lights: 6
- No. of LED strobe lights (clear): 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.72.12.1x1



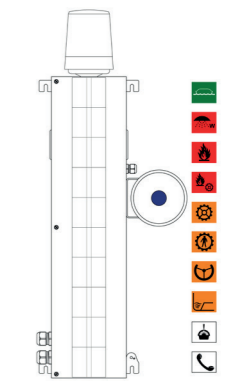
- No. of LED triangular lights: 7
- No. of LED strobe lights (clear): 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.82.12.1x1



- No. of LED triangular lights: 8
- No. of LED strobe lights (clear): 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.102.12.1x1

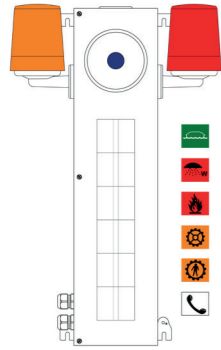


- No. of LED triangular lights: 10
- No. of LED strobe lights (clear): 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

*available in 115VAC, 230VAC, 24VDC

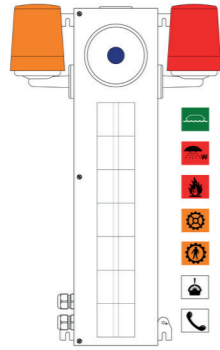
PERIPHERY EQUIPMENT

LSD 313.62.22.1x1



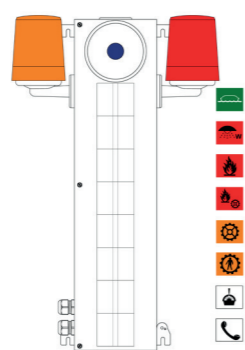
- No. of LED triangular lights: 6
- No. of LED strobe lights : 2
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.72.22.1x1



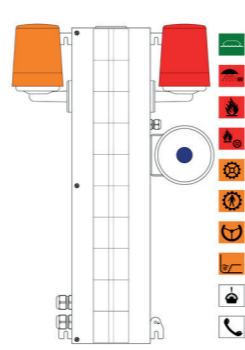
- No. of LED triangular lights: 7
- No. of LED strobe lights: 2
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.82.22.1x1



- No. of LED triangular lights: 8
- No. of LED strobe lights: 2
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.102.22.1x1

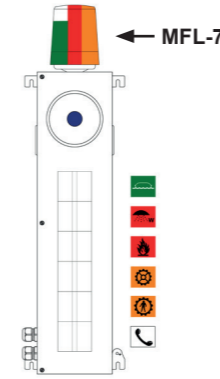


- No. of LED triangular lights: 10
- No. of LED strobe lights: 2
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing



LSD COLUMNS WITH MED TYPE APPROVED MULTI-TONE SOUNDER AND MULTI-COLORED STROBE LIGHT (7 COLORS)*

LSD 315.62.12.1x1



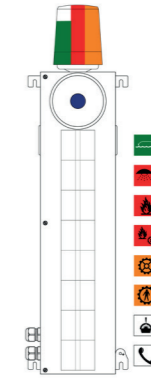
- No. of triangular lights: 6
- No. of multi-color LED strobe lights: 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 315.62.12.1x1



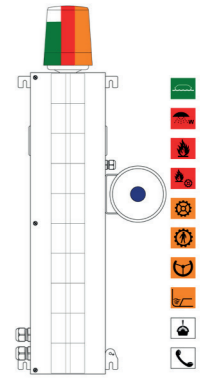
- No. of triangular lights: 7
- No. of multi-color LED strobe lights: 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 315.62.12.1x1



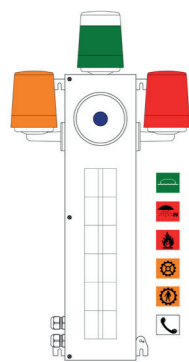
- No. of triangular lights: 8
- No. of multi-color LED strobe lights: 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 315.62.12.1x1



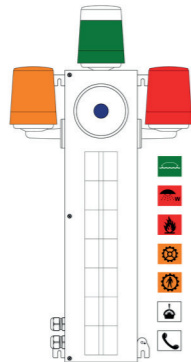
- No. of triangular lights: 10
- No. of multi-color LED strobe lights: 1
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.62.32.1x1



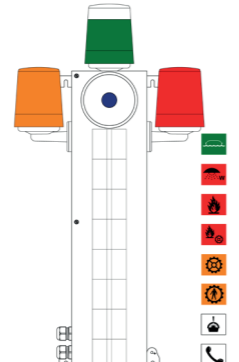
- No. of LED triangular lights: 6
- No. of LED strobe lights: 3
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.72.32.1x1



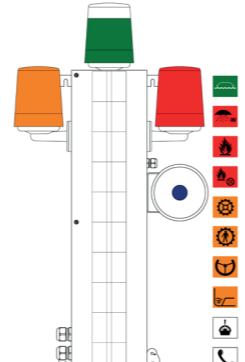
- No. of LED triangular lights: 7
- No. of LED strobe lights: 3
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

LSD 313.82.32.1x1



- No. LED of triangular lights: 8
- No. of LED strobe lights: 3
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

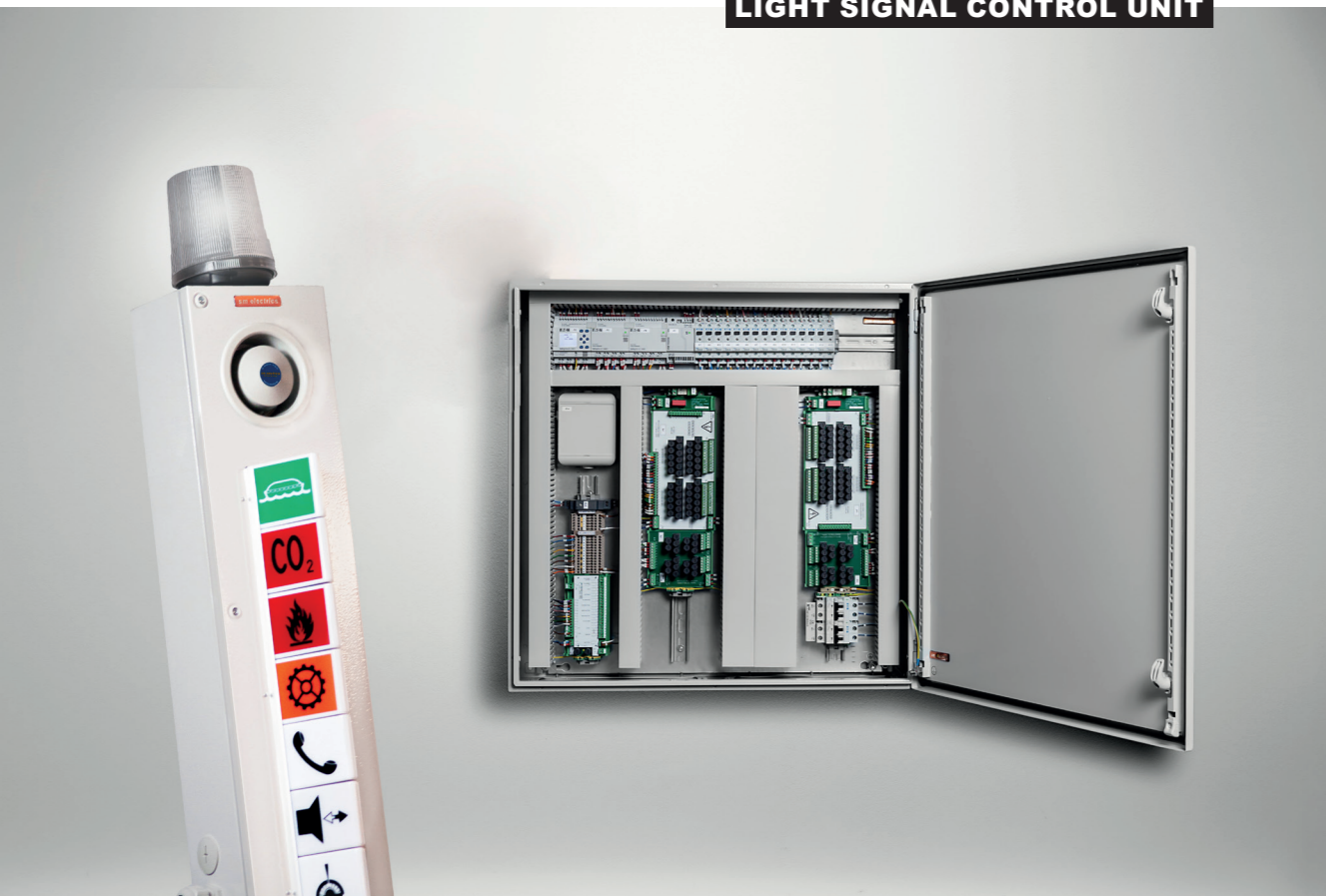
LSD 313.102.32.1x1



- No. LED of triangular lights: 10
- No. of LED strobe lights : 3
- smart sounder with multiple frequencies (64 different sound pattern)
- IP class: 55
- local telephone input processing

*available in 115VAC, 230VAC, 24VDC

LIGHT SIGNAL CONTROL UNIT



LSCU 250.1.6.8

- on mounting plate 483 x 320mm
- 12 logical inputs
- 12 logical outputs distributed to 6x11 single fused output channels
- integrated test mode
- individual sound delay parameter
- 6 physical lines
- 6 columns per line
- total columns LSDs 36

also available with PSDM (Power Source Detection Module)

- incl. automatic power supply change-over module - 2x24VDC, 2x8A (MSB & ESB)
- incl. automatic power supply change-over module - 2x115VAC, 2x8A (MSB & ESB)
- incl. automatic power supply change-over module - 2x230VAC, 2x8A (MSB & ESB)

770011



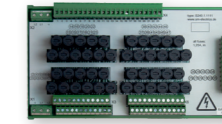
- wall box for LSCU
- with 17 cable glands
- 600 x 600 x 210mm

770733



- wall box for LSCU
- with 17 cable glands
- 600 x 380 x 210mm

770050



- 4- lines output module (to connect further 24 LSDs)

770295



- 2x16A power supply change-over module

770873



- 2x32A power supply change-over device

770397



- speaker, bulkhead mounted
- DKSM 15-120 (120db)
- low impedance

099337



- speaker, built-in
- sme 133
- low impedance

999507



- LED bulbs for triangular lights (each light)
- (MOQ - 25pcs)
- 230 VAC
- especially designed for marine application

999770



- LED bulbs for triangular lights (each light)
- (MOQ - 25pcs)
- 24 VDC
- especially designed for marine application

999769



- LED bulbs for triangular lights (each light)
- (MOQ - 25pcs)
- 115 VAC
- especially designed for marine application



- individual paint finish (industrial standard)



- individual paint finish (yacht standard, high glossy)

770675



- individual symbol for triangular lights (adhesive foil)



- FL-1 cover (amber)



- FL-1 cover (clear)



- FL-1 cover (blue)

770676

PERIPHERY EQUIPMENT

770679



- FL-1 cover (green/clear)

770678



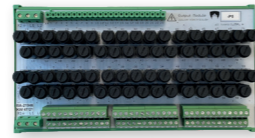
- FL-1 cover (green)

770677



- FL-1 cover (red)

201222



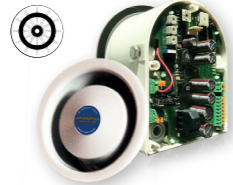
- 6-lines output module

201200



- PSDM 210.2.8.1, 230VAC
- 2x8A power supply change-over module
- time delayed change over

991527



- Fire Alarm Sounder - AGM 410.1.8.2 (230VAC)
- System Voltage 24VDC (19-29 VDC)
- Alarm input voltage 110...230VAC (50/60Hz)
- 64 different sound characteristics
- MED certified

7777777



MFL-7

- MFL-7, stroboscopic LED light (100...240VAC)
- 7 different colours in one lamp (red, green/white, amber, yellow, green, blue, clear)
- selectable flash pattern
- priority based alarm inputs

099787



- FL-1, strobe LED light green (20-300VDC, 100-240VAC)
- System voltage 20...300VDC, 100...240VAC 50/60Hz
- Flashing frequency 2Hz
- Power consumption 2,5W – 9W

099786



- FL-1, strobe LED light blue (20-300VDC, 100-240VAC)
- System voltage 20...300VDC, 100...240VAC 50/60Hz
- Flashing frequency 2Hz
- Power consumption 2,5W – 9W

099785



- FL-1, strobe LED light amber (20-300VDC, 100-240VAC)
- System voltage 20...300VDC, 100...240VAC 50/60Hz
- Flashing frequency 2Hz
- Power consumption 2,5W – 9W

099784



- FL-1, strobe LED light red (20-300VDC, 100-240VAC)
- System voltage 20...300VDC, 100...240VAC 50/60Hz
- Flashing frequency 2Hz
- Power consumption 2,5W – 9W

099783



- FL-1, strobe LED light gn/wh (20-300VDC, 100-240VAC)
- System voltage 20...300VDC, 100...240VAC 50/60Hz
- Flashing frequency 2Hz
- Power consumption 2,5W–9W

099777



- FL-1, strobe LED light clear (20-300VDC, 100-240VAC)
- System voltage 20...300VDC, 100...240VAC 50/60Hz
- Flashing frequency 2Hz
- Power consumption 2,5W – 9W

099334



- Wall bracket for FL-1/MFL-7 incl. Seals & screws

INDICATOR PANEL FOR CONSOLE MOUNTING

LSD 210.902.0.120 (230 VAC)

991260



- indication panel for console mounting
- 144 x 144 x 75mm
- max. 9 symbols
- electronic buzzer included
- LED technology
- IP23

LSD 210.902.0.130 (24 VDC)

770774



- indication panel for console mounting
- 144 x 144 x 75mm
- max. 9 symbols
- electronic buzzer included
- LED technology
- IP23

SHIPS ALARM INDICATOR

LSD 288.12.0.010	1 symbol 115 VAC	099889
LSD 288.12.0.020	1 symbol 230 VAC	099890
LSD 288.12.0.030	1 symbol 24 VDC	099891
LSD 288.22.0.010	2 symbol 115 VAC	099892
LSD 288.22.0.020	2 symbol 230 VAC	099893
LSD 288.22.0.030	3 symbol 24 VDC	099894
LSD 288.32.0.010	3symbol 115 VAC	099895
LSD 288.32.0.020	2 symbol 230 VAC	099896
LSD 288.32.0.030	3 symbol 24 VDC	099897
LSD 288.12.0.110	1 symbol 1 sounder 115 VAC	099898
LSD 288.12.0.120	1 symbol 1 sounder 230 VAC	099899
LSD 288.12.0.130	1 symbol 1 sounder 24 VDC	099900
LSD 288.22.0.110	2 symbol 1 sounder 115 VAC	099991
LSD 288.22.0.120	2 symbol 1 sounder 230 VAC	099992
LSD 288.22.0.130	2 symbol 1 sounder 24 VDC	099993



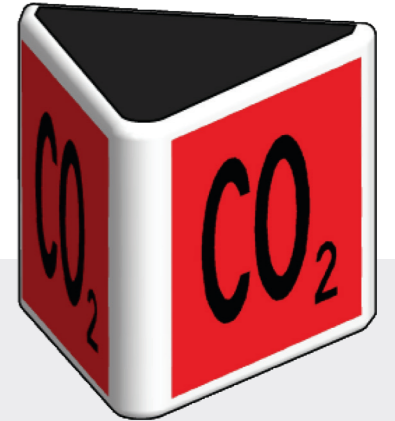
e.g. LSD 288.12.0.110

PERIPHERY EQUIPMENT

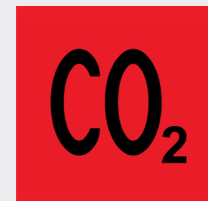
TRIANGULAR LAMP SET

(incl. triangular cover, bracket, sealing, bulb holder and LED bulb)

Triangular Light Kit	LED 24 VDC	099888
Triangular Light Kit	LED 230 VAC	099887



TRIANGULAR LIGHT SYMBOLS



CO² ALARM
099034



FIRE ALARM
099333



FIRE ALARM ER
099035



HI FOG ALARM
099244



TELEPHONE CALL
099037



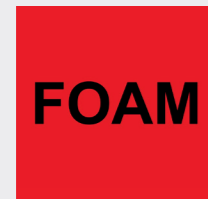
SPT CALL
099338



BRIDGE ALARM
099065



WATCH ALARM
099066



FOAM ALARM
099245



NOVEC ALARM
099400



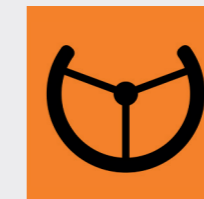
WATER FOG
099332



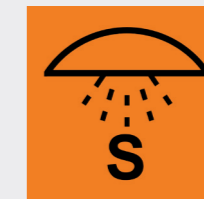
WATER MIST
099407



COLD STORE ALARM
099042



STEERING GEAR
099140



SPRINKLER ALARM
099075



WATCH ALARM ER
099039



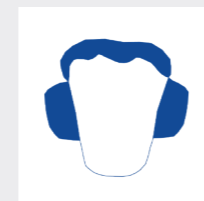
TOXIC GAS
991253



GENERAL ALARM
099033



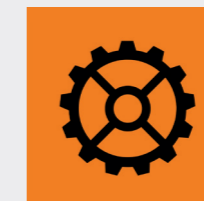
HOSPITAL CALL
099043



ENGINEER CALL
099404



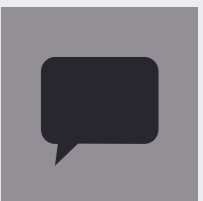
BILGE ALARM
099139



ENGINE ALARM
099036



COMBUSTIBLE GAS
991251



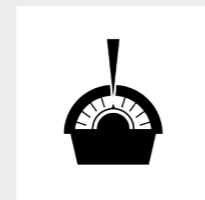
INDIVIDUAL SYMBOL
(on request)



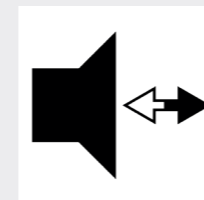
ABANDON SHIP
099666



MAN OVER BOARD
099671



EOT CALL
099038



INTERCOM CALL
099219



DEAD MAN ALARM

DMA (for engine room watch)

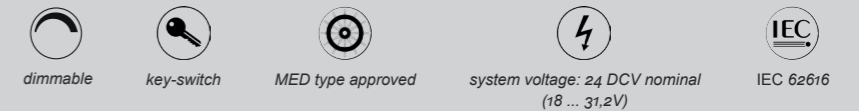
The dead man alarm system is designed to monitor the ability of the engineer on duty in the engine room. Just before entering the engine room, the engineer on duty should start the adjustable countdown (3 - 27min) of the dead man alarm system for his own safety. In case no reset has been triggered by pushing one of the installed reset units during the pre-defined time, the dead man alarm system will start an alarm escalation sequence.



APPLICATION

- compact connecting module**
- intuitive control philosophy**
- easy to install**

If the dead man alarm system does not detect any reset, the alarm will escalate to backup engineer cabin to advise disability of duty personnel. Additionally, the dead man alarm system provides the possibility to call for immediate assistance by pushing one of the reset units for longer than 5 seconds (emergency call).



DATA & FEATURES

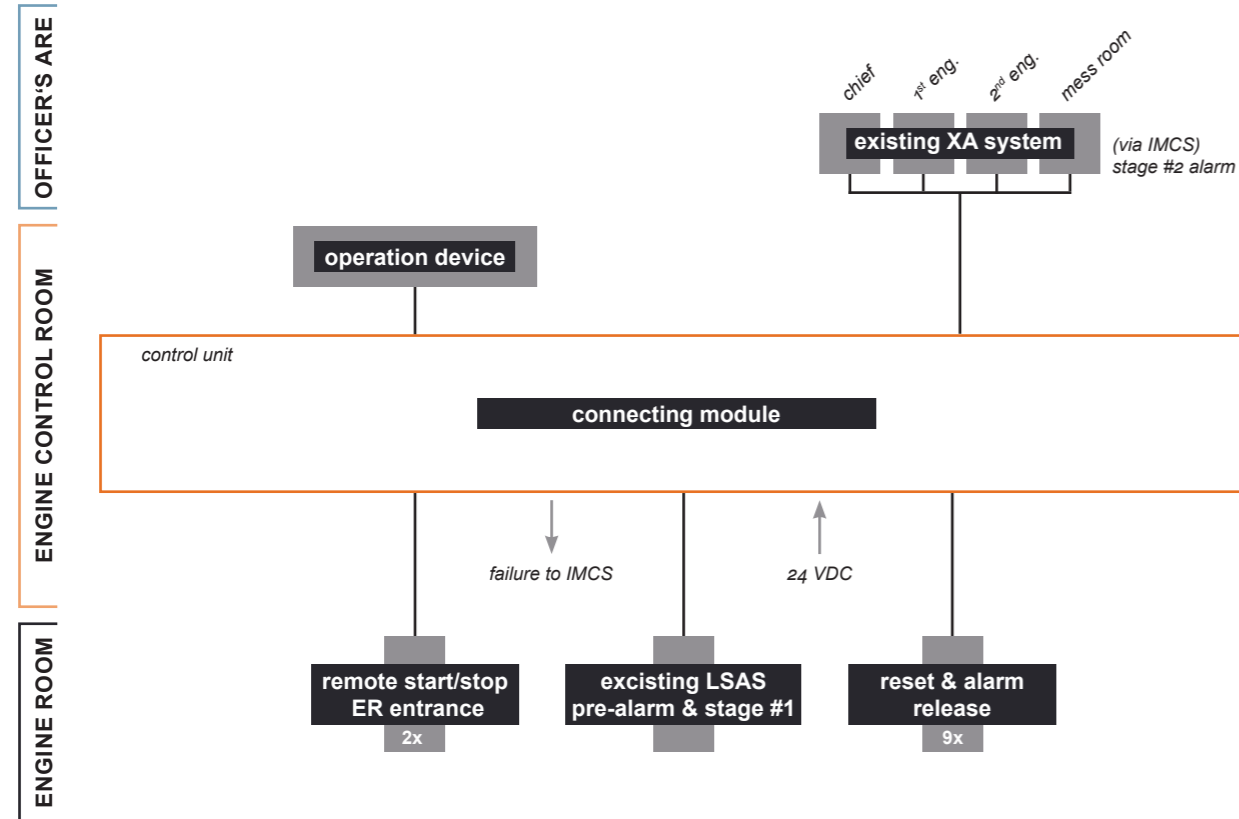
- 2 x 16 character green light display shows all relevant device and alarm states
- rotary encoder with integrated push button - simple and effective for user
- integrated buzzer, eight individual sound characteristics & volume adjustment
- connecting module designed for TS 35 terminal rail
- emergency call facility (manual release from ER)

visual pre-alarm & audible stage #1 alarm

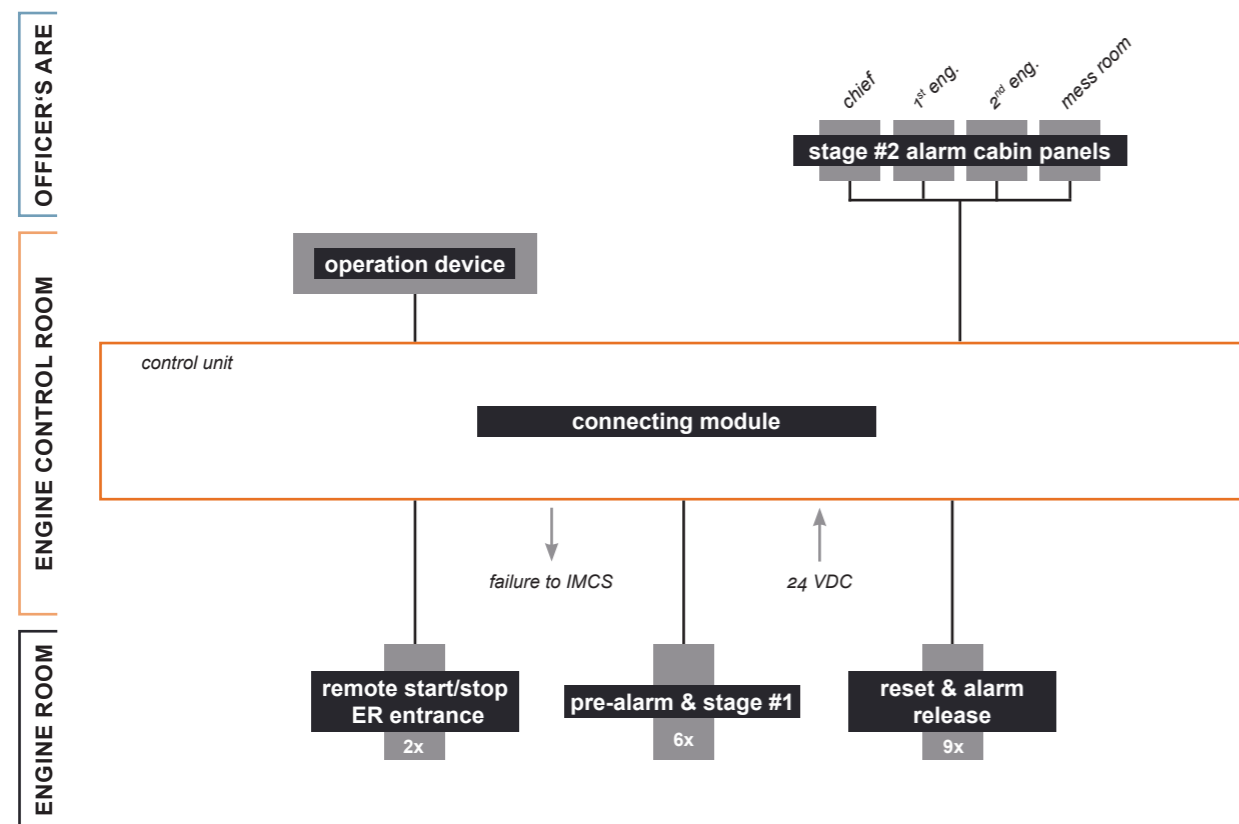
- The audible & visual alarm to reach the ER watch keeper can be transferred via existing light signal columns, saving additional engine room alarm devices
- sm electrics' scope of supply does cover modern and reliable light signal alarm systems (LSAS) for engine room as well.

DMA

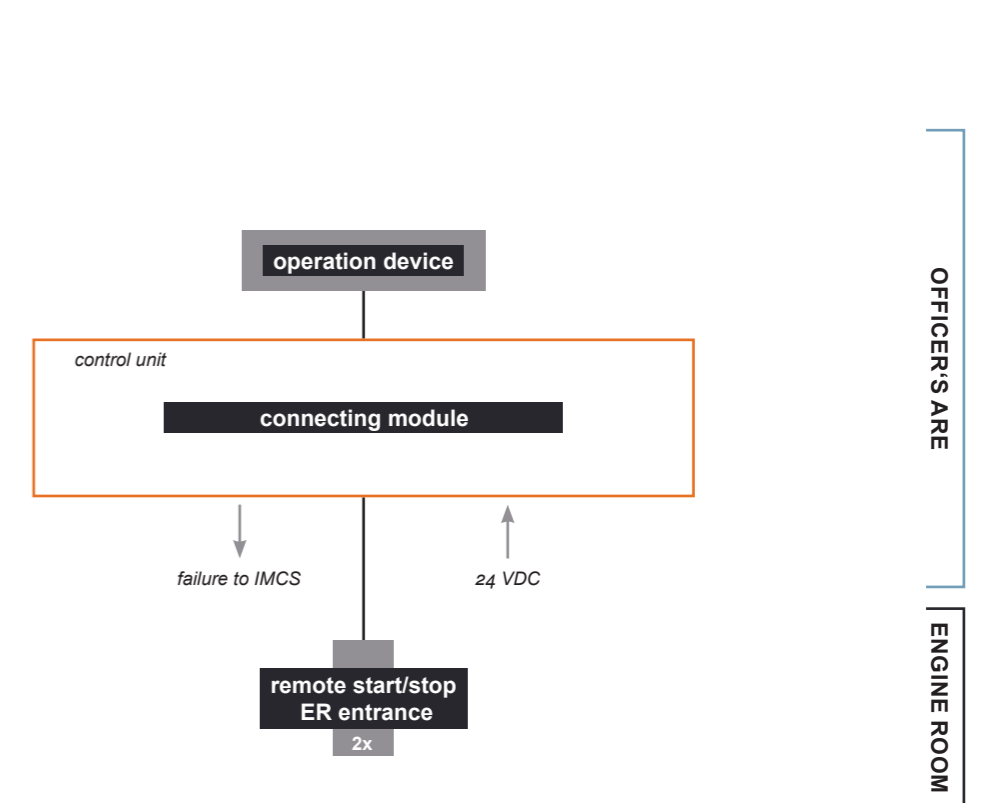
SAMPLE SYSTEM **standard vessels**



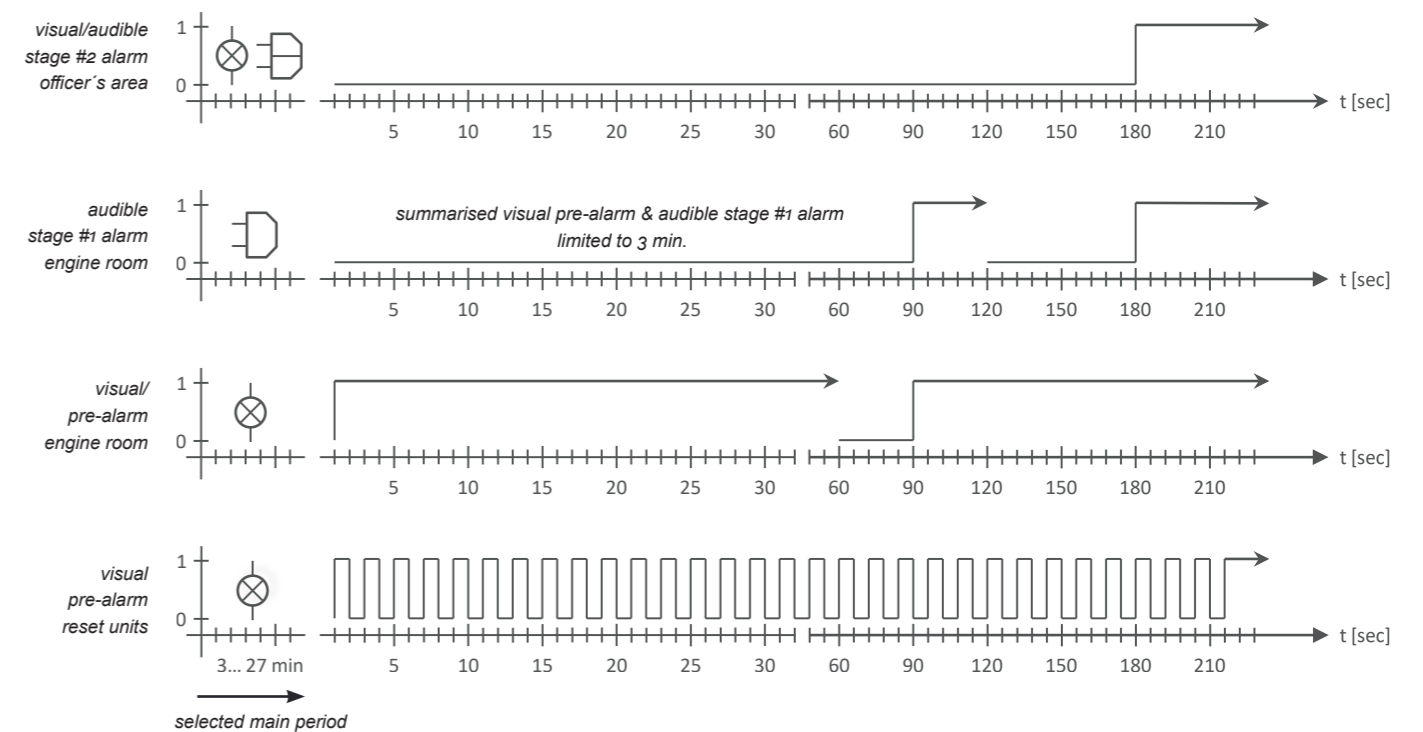
SAMPLE SYSTEM **standard vessels**



SAMPLE SYSTEM **small vessels**



TIME TABLE



PERIPHERY EQUIPMENT

DMA WATCH ALARM SYSTEM *basic* 770600



DMA | le guardian 2025

- le guardian 2025 connecting module LCM 210.24.0.0
- le guardian 2025 operating device LOD 222.24.0.0
- 15 pole system cable, l=3m

SWITCH ON/OFF WALL BOX PERSONNEL ALARM 770043



DMA | WAP 222.3.0.0

- 24 VDC
- IP 65

PERSONNEL ALARM BOX 770048 / 770465



DMA | WAR.222.2.0.0 / WAR.222.2.0.0A

- IP 65
- 24 VDC power supply
- dimension 122 x 122 x 90mm

STAGE #1 ALARM RESET WALL BOX *with buzzer* 770230 / 770231



DMA | WAR.222.2.1.0 / WAR.222.2.1.0A

- IP 65
- 24 VDC power supply
- dimension 122 x 122 x 90mm
- 85 dB(A)

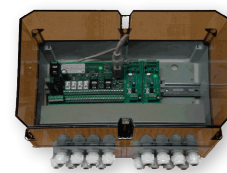
PERSONNEL ALARM RESET *illuminated push button* 770053



DMA | WAR 222.1.0.0

- 24 VDC
- IP 67

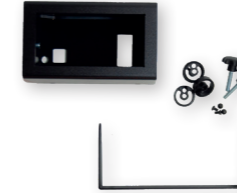
WALL BOX FOR LCM 770317



DMA | WBC 210.1.0.0

- 360 x 250 x 165mm
- IP 23
- 16ea
- M25 cable glands

SWIVEL MOUNTING BRACKET 770309



DMA | WMB 222.1.0.0

- for operating device
- attachment on desk/wall/ceiling

ALARM PANEL STAGE #3 *with buzzer (non-resettable)* 770604



DMA | WAP 222.5.0.0

- for engineer's cabin
- 85 dB(A)
- bulkhead mounted
- 24 VDC; IP 23

ALARM PANEL STAGE #3 *with buzzer (non-resettable)* 770603



DMA | WAP.222.2.0.0

- for engineer's cabin
- 80 dB(A)
- flush mounted
- 24 VDC; IP 23
- non-resettable

ALARM PANEL STAGE #3 *with buzzer (resettable)* 770931



DMA | WAP.222.2.0.1

- for engineer's cabin
- 80 dB(A)
- flush mounted
- 24 VDC; IP 23
- resettable

FAILURE ALARM PANEL 770423



DMA | FAP 222.1.0.0

- for indication system fail state
- inclusive test/reset facility
- 24 VDC (18 ... 31 VDC)
- IP 23

ALARM PANEL STAGE #1 + #2 770351



DMA | WAP 222.4.0.0

- for engineer's area & engine room
- bulkhead mounted
- 64 ... 112 dB(A)
- 24 VDC, IP 23

CONTACT

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info@sm-electrics.de
www.sm-electrics.de

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