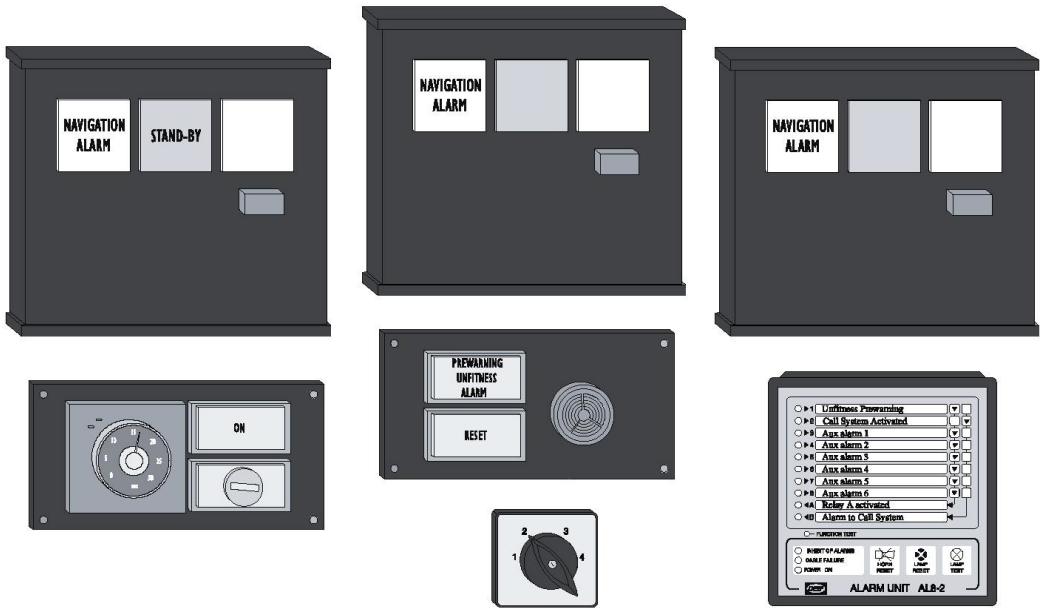
User's manual

UNFITNESS & ALARM SYSTEM
Type UAS-1
4189350005C



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CONTENTS:

1.0 SHORT FORM DESCRIPTION

This system is an integrated alarm and unfitness system based on the AL8-2 alarm panel.
The system consists of a number of these alarm panels, one control box, one timer panel, a number of prewarning panels and a calling system for the navigation officers.

The system works as an integrated bridge alarm and unfitness alarm system. In case an ordinary bridge alarm is not accepted within a few seconds, alarm is released in the extension system i.e. call of the stand by officer.
Up to four officers may be connected to the extension system. By means of a selector switch on the bridge or in the captain's office, a stand by backup officer is selected.
If the system is designed for one officer only, the selector switch may be omitted.

If the alarm is not accepted on the bridge within 3 min. from transfer, buzzers in all cabins are reactivated and a special output is activated.

A special timer panel is located in the captain's office or on the bridge. It sets the time between acknowledge of the prewarning alarm. Besides the prewarning siganl is connected to alarm channel no. 1 on the master panels as well.
This input serves as unfitness alarm input. A number of prewarning panels may be connected to the system for indicating and acknowledge of prewarning alarm. In case of a prewarning, the buzzer and the alarm signal in the panel will become active.

The RESET push button in the prewarning panel(s) has to be activated before expiry of the timer, if not, a prewarning is released. External equipment e.g. radar etc. may be connected to the prewarning panel(s), to indicate the operator is well and operating external equipment and.resetting the prewarning timer.

In case one of the RESET push buttons or the inputs from external equipment are blocked, a continuous prewarning will be released after expiry of the timer.

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2.0 TECHNICAL DESCRIPTION

2.1 The Unfitness Alarm

The main component in this part of the system is the timer panel. The timer panel may be placed on the bridge or in the Captain's office. When the "dead man" surveillance is on e.g. the key switch is turned and the green light is lit, the timer is running. When the timer is running, the officer on duty must prevent this timer from running out i.e. he has to activate the "RESET" button on a prewarning panel within 5 to 12 minutes or when the prewarning alarm is released. Blocking a "RESET" button will cause the timer to be reset, where after a new reset is not possible and the timer will eventually run out again and the alarm will be activated. Max. time between the prewarnings is set on this panel to a fixed time specified when ordering the system.
If a RESET push button locks in activated position or is blocked, a renewed timer sequence becomes impossible. Prewarning and alarm are released and can only be stopped by switching the timer panel OFF.

When the timer is switched on and the indicator is lit, prewarning is released and the timer is running.
When the timer is running, a small green LED on the timer will be flashing to indicate that the time has not expired yet. When it changes to steady light, time has run out and prewarning is released.
A red LED indicates the state of the prewarning output. When the red LED is off alarm is released.

2.1.1 Alarm Sequence – Unfitness Alarm

If the navigator on duty fails to reset the watch timer within its set-point (e.g. 15 sec.), a prewarning is released. The prewarning will be released in two steps.

- First step is flashing prewarning lights in the prewarning panels.
- Second step is flashing prewarning lights and a steady buzzer signal.

The time-delay from begin of flashing lights to steady buzzer signal may be adjusted on timer T2 in the prewarning control box.
When the steady buzzer signal is released, alarm is released in alarm channel no. 1 on the bridge alarm panel type AL8-2 too. This channel may be programmed to delay the watch alarm up to 40 sec. but is set to a 15 sec. delay by default. During this delay, it is possible to cancel the watch alarm by pressing one of the "RESET" push buttons on the prewarning panels. Doing this will initiate a new cycle, at the end of which a new prewarning will be released.
However, if the prewarning is not canceled within the delay of alarm channel no. 1, alarm channel no. 1 will be released and initiate the bridge alarm. The bridge alarm will set off the local buzzer and give a signal to alarm channel no. 2. The bridge alarm will sound until reset by pressing "HORN RESET" on the master AL-8. However, if the bridge alarm is not reset within expiry of channel no. 2 delay, alarm will be transferred to the extension call system.

2.2 Alarm Sequence – Bridge Alarm

The alarm unit AL8-2 is capable of handling 8 alarms per unit. Up to 5 units may be interconnected in a master slave configuration. Alarm channel no. 1 in the master is dedicated to handle the watch alarm and channel no. 2 is dedicated to transfer of bridge alarm to the extension system.
All alarms must be digital. Inputs can be programmed individually to hold NO or NC types and to have individually delay. Reset of the alarm channels may be connected to different equipment on the bridge for handling alarms from navigation equipment, power failure alarms etc.
Some alarms are delayed before a bridge alarm is released. Adjusting the delay is done by entering programming mode on the alarm panel type AL-8. The delay may be adjusted from 1 - 40 sec.
For detailed information about programming the alarm unit, please refer to the AL8-2 manual.

If a bridge alarm is released i.e. alarm in channel 3 - 40, a local buzzer on the bridge is activated. If the alarm has not been reset by pressing “HORN RESET” push button within the delay alarm of channel no. 2, the alarm will be transferred to the selected stand by officer.

The stand by officer is selected by means of the "Stand By Selector” switch.
In case only one officer is connected to the alarms extension system, this switch may be omitted.
If more than one officer are connected, the blue indication lamp "Stand By" is lit in the cabin of the officer selected by the switch.
If a bridge alarm is not reset and the alarm is transferred to his cabin, the buzzer in his cabin is activated and "NAVIGATION ALARM" is flashing in all panels. The buzzer in public area panel(s) are also activated.
By pressing the black push button of the panel at the stand by officer, the buzzer stops and "NAVIGATION ALARM" in all panels changes to steady light.
Buzzer in public room panel(s) is stopped when the alarm is reset from the navigator’s cabin, or it may be stopped locally.

If the stand by officer does not reset the alarm on the bridge alarm system within 3 minutes from transferred, all buzzers are activated with an intermittent signal. A special output for horns in the officers’ alleyway is likewise activated.

The alarm may now only be cancelled from the bridge by activating the “HORN RESET” and “LAMP RESET” push button on the master unit of the AL8-2 panels. The buzzers, horn and lights will be switched off, and the alarm(s) may be acknowledged.

If the power to the relay box fails or the fuse inside blows, the relay outputs to horns and bells become de-energised as in case of an alarm.

In case the power fails or an internal error occurs in an AL8-2 unit, the bridge alarm will be released. However, it is NOT possible to reset this failure by means of any switch. The only way to bypass this alarm is by shorting the relay output of group relay A.

3.0 SYSTEM SET-UP

The system is designed as a non interruptable system with respect to the power supply. This means there is no on/off switch in the system. The only on/off switch in the system is for turning on and off the watch alarm part.

In case suppression of transfer to extension system is wanted, inhibit may be programmed to alarm channel no. 2. If an external switch is connected to the inhibit input of alarm channel no. 2, this switch will in closed position block for transfer of alarms to the extension system. This switch may be a dual key switch with a break contact in the same unit. If this second contact is connected in series with the signal from the horn output of the master AL8-2, the bridge alarm will only be displayed on the AL8-2 panels and the horn will not sound.

One must remember when setting up the AL8-2, that group relay A is used for failure indication of each AL8-2 unit and may not be used by any alarm channels.
Group relay B in the master unit is dedicated for transfer of bridge alarms to the extension system.

3.1 AL8-2 Set-up

The form shown below shows how the AL8-2 panels are set up. All blank fields may be filled by the user.

Master Unit:

Channel No	Text	Input Type	Alarm Delay	Group Output	Alarm Inhibit	Cable Fail Detect
1	Watch Alarm	NC	15 sec		N	N
2	Call System Activated	NC	15 sec	B (NC)	Y	N
3						
4						
5						
6						
7						
8						

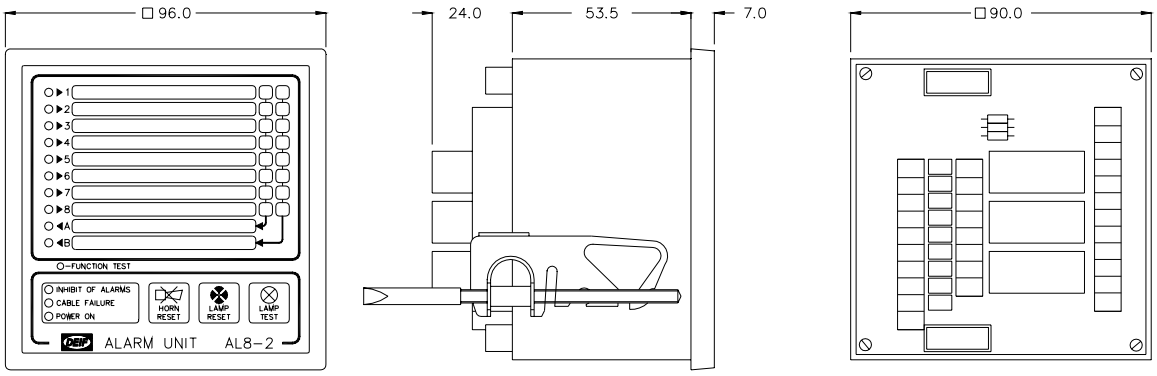
Slave Unit:

Channel No	Text	input Type	Alarm Delay	Group Output	Alarm Inhibit	Cable Fail Detect
1						
2						
3						
4						
5						
6						
7						
8						

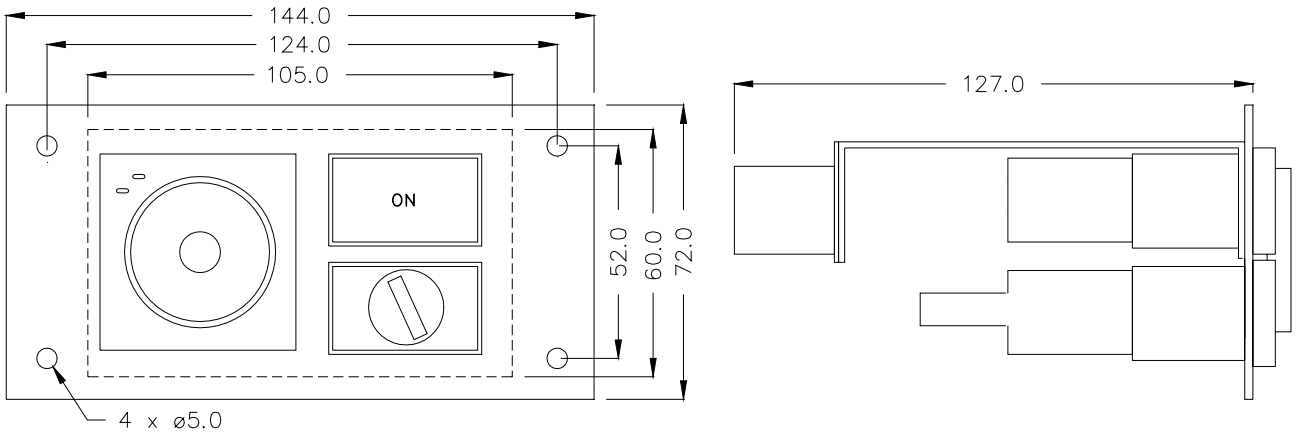
Slave Unit:

Channel No	Text	input Type	Alarm Delay	Group Output	Alarm Inhibit	Cable Fail Detect
1						
2						
3						
4						
5						
6						
7						
8						

3.2 AL-8 Dimensions

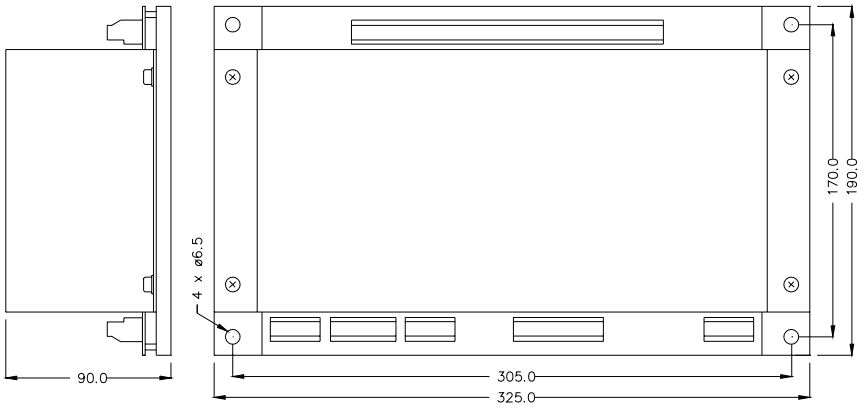


3.3 Timer Unit & Prewarning Panel Dimensions

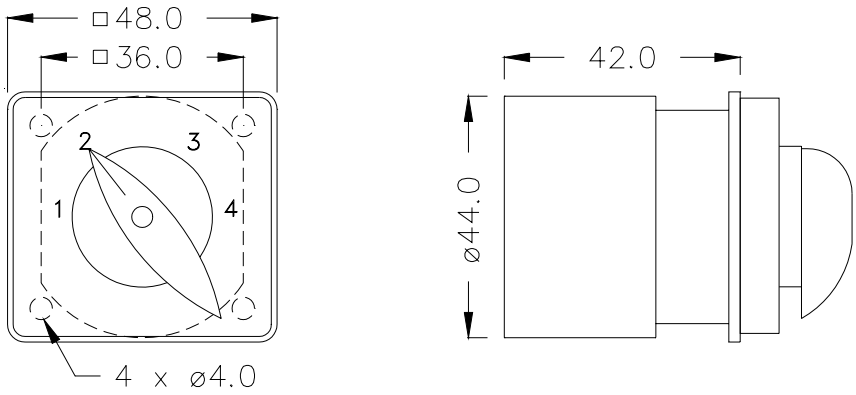


3.4 Extension Alarm System

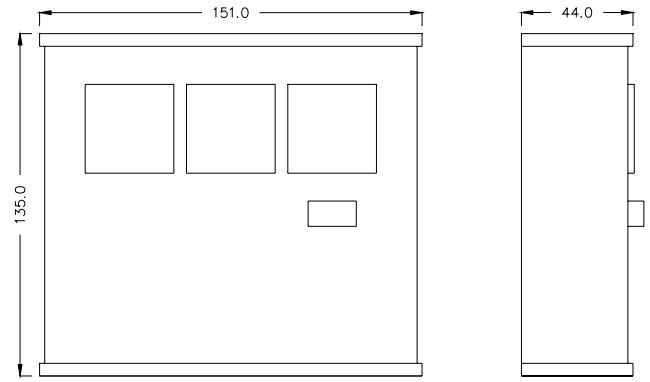
3.4.1 Relay Control Box 869.62



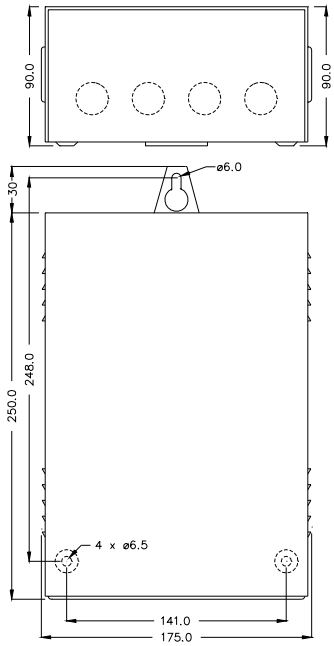
3.4.2 Stand By Selector Switch



3.4.3 Officers & Public Space Panel



3.5 Power Supply type 849.041



3.6 Connection

See draw. no. 4162430014 on the last page.

4.0 COMPONENT LIST

ITEM	ID. No.	Qty
Alarm unit type AL8-2 - excl. programming - excl. texts	2033050002	2
Slave kit for AL8-2	2033050004	1
Prewarning Control Box UAS-1.1	2033450001	1
Timer panel UAS-1.2	2033450002	1
Prewarning Panel UAS-1.3	2033450003	3
Relay Control Box 869.62	2033280006	1
Accommodation Panel type 862.314-07	20332900003	3
Public Space Panel type 862.314-08	2033290004	2
Power Supply type 849.041	2033270043	1
Selection stand by switch UAS-1.4	1021520012	

5.0 SPARE PART LIST

Below is a list of items, which are the normal cause of malfunction due to wear out.

862.314-0x	: Lamp bulb 30V/40mA	1024530004
862.62	: Relay Schrack RL210024	1023040003
	Relay Simens V23154-D0721-F104	1023030002
	Flash unit	2033380002
	Fuse 4AT	1020500007

6.0 TECHNICAL DATA

Operating Voltage	:	24VDC ±20%
Operating Temperature	:	-25 ... 70 °C
Power Consumption	:	< 50W
Relay Box output	:	2 x 220VAC/10A 1 x 24VDC/1A 1 x 24VDC/1.5A (3 min delay)
AL8-2 output	:	250VAC/2A, 250VDC/1A

Drawing No. 4162430014C