

Navigation and Signal Lights Control



The navigation and signal lights are controlled from a panel that fits into a console located on the bridge. This is linked to a power panel located within the console.

Navigation and signal lights

Illuminated switches on the panel control the lights. Each light supplied is also represented by an LED within a mimic diagram in order to display the status of the lights. Failure of a light causes the relevant switch (LED) to flash and initiates an audible alarm. All indicator LEDs are dimmable and an alarm test facility is provided for the LEDs and the audible alarm.

The following lights are controlled:

Port, starboard, foremast, aft mast, stern, forward anchor, aft anchor, NUC upper port, NUC upper starboard, RAM white port, RAM white starboard, NUC lower port, NUC lower starboard. (All duplex lights)
Towing. (single lights), Masthead obstruction port, masthead obstruction starboard. (Flashing lights)

Two spare circuits are also provided.

The power panel is supplied with a 230V AC normal supply, a 230V AC emergency supply and a 24V DC supply. An automatic changeover switch for the AC supplies is included in the panel.

CONTROL PANEL

Normal Operation

When the "Normal" button is depressed it will switch on the corresponding 230VAC external light, illuminate an LED on the mimic and illuminate the button itself.

Standby Operation

When the "Stand by" button is depressed it will switch on the corresponding 24VDC external light, illuminate an LED on the mimic and illuminate the button itself.

Lamp failure Alarms

If any light fails, the buzzer will sound and the corresponding switch LED will flash (at a rate of 1s on, 1s off). Pressing the "accept alarm" button will silence the buzzer but the LED corresponding to the fault will continue to flash. The appropriate LED in the mimic will also flash. Pressing the normal button will switch off the light. Pressing the Standby button will switch on the standby light.

Input supply failure alarms

If the normal or emergency supply fail the buzzer will sound and the corresponding LED will flash. Pressing the "accept alarm" button will silence the buzzer but the LED corresponding to the fault will continue to flash until the power supply has been reinstated.

In normal operation the lights are supplied from the normal 230Vac supply. If the normal supply fails, the control panel will automatically transfer to the emergency supply.

If both normal and emergency supplies fail, the buzzer will sound and all the lights that are switched on will default to their 24VDC stand by supply. This will happen without any intervention from the operator and all the lights that have been switched on will only be off for a short period of time.

The buzzer will be silenced by the accept alarm button. Each of the normal buttons that have been depressed will continue to flash until they are depressed again and switched off. Each of the standby buttons will also flash but will remain constantly lit once their button has been depressed i.e. switched on.

230VAC light control

Port, starboard, foremast, aft mast, stern, forward anchor, aft anchor, NUC upper port, NUC upper starboard, RAM white port, RAM white starboard, NUC lower port, NUC lower starboard, towing, masthead obstruction port, masthead obstruction starboard, spare, spare.

24VDC light control

Port, starboard, foremast, aft mast, stern, forward anchor, aft anchor, NUC upper port, NUC upper starboard, RAM white port, RAM white starboard, NUC lower port, NUC lower starboard, spare, spare

Masthead Obstruction light control

The masthead obstruction lights are via a 3 position rotary switch. The control settings are:
Steady operation (continuous)
Flashing - 1 second on 1 second off
Occulting - 3 second on 3 second off

Test

Depressing the test button will sound the buzzer and illuminate all LED's and illuminated push buttons at full brightness.

Lamp Dim

The potentiometer dims the panel LEDs. It is also possible to blackout the panel completely.

Control Panel Power

The control panel operates from a supply that is derived from the power panel

Mounting

The equipment is suitable for mounting in a console.

NAVIGATION & SIGNAL LIGHTS POWER PANEL

Inputs

Normal input supply, 230Vac, 60Hz
Emergency input supply, 230Vac, 60Hz
Panel input supply, 230Vac, 60Hz
Power supply 24VDC (50W)
From 17 off 230V circuit breakers (2pole) for light circuits
From 12 off 24VDC circuit breakers (2pole) for light circuits

Outputs

230V, 60Hz from normal/emergency supply ACOS
21 off 230V lights
15 off 24VDC light

Remote Interface

Changeover volt free contacts for power supply failure

Fault Monitoring

Detects lamp failure

Power panel Power Supply

230V, 60Hz derived from the normal/emergency switch. If the input is not present the panel will operate from the 24VDC standby supply.

Mounting

The equipment will be suitable for mounting within the bottom of the console.

Internal wiring

Connections are made with cable insulated with low fire hazard cross linked polyolefin RADOX 125.

Cable connections

User connections are made to rail mounted or PCB mounted terminals.

Dimensions and Weights

	Height mm	Width mm	Depth mm	Weight kg
Control Panel	400	500	175	10
Power Panel	530	620	180	17

ENVIRONMENTAL CHARACTERISTICS

Shock

Designed for a shock level of 15g. For shock levels above this shock mounts should be used.

Vibration.

Designed to meet the vibration requirements of DGS 350. (5 to 33Hz +/- 0.125mm)

Noise

< 65dbA.

Electromagnetic Compatibility.

Designed to meet the requirements of Def Stan 59-41

Ambient Temperature.

0°C to + 45°C.

Relative Humidity

10% to 95% non-condensing.

Ships Motion

The equipment is designed to withstand, without damage or degradation of performance or spillage of fluids, ship motion due to the action of the sea and weather as well as accelerations and velocities deriving from deliberate ship manoeuvres. Typically

Roll angles	± 30°
Pitch angles	± 10°
Steady list angles	± 15°
Steady trim angles	± 5°

