

AHD-POS 10

Navigation Lights Monitoring

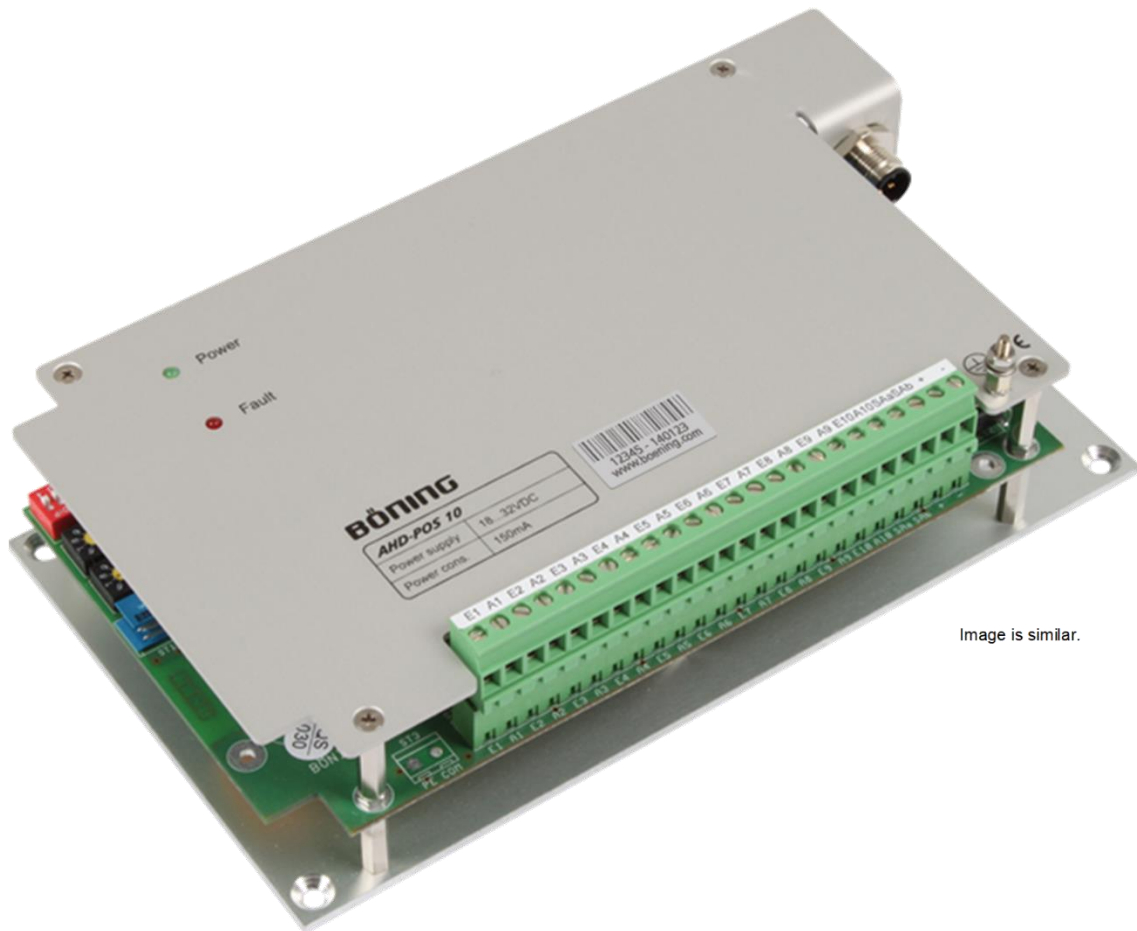


Image is similar.

- **Monitoring of up to 10 DC lamps**
- **Visualization of the lamp status on Panel PCs and displays**

Introduction

A ship's navigation lights show its heading in dim light and bad weather. They are internationally required and prevent collisions at sea. Moving vessels must switch on their navigation lights from sunset to sunrise and also at daytime, if the visibility is limited. Every ship must have a white masthead light, a red portside light, a green starboard side light and a white stern light. Special work boats, fishing boats and vessels not under command require a different setup of lights. Sailing and sports boats can have combined lights. Navigation lights are safety relevant, therefore their operation is usually monitored. Classified ships must have a monitoring system for navigation lights.

Function

The navigation lights monitoring system AHD-POS 10 has been designed for up to ten DC lights. It monitors whether the lights are on, off or defective and may display the status on Panel PCs or displays.

AHD-POS 10 is installed in the electric circuit between switch and lamp. When a lamp is switched on, the lamp's voltage is applied to the input of AHD-POS 10 and passed on to the lamp at the output. AHD-POS 10 detects that the lamp is switched on, and checks whether a current is flowing through the lamp. An alarm is triggered when no current is detected. The alarm message is sent to the CAN bus and to a normally closed (NC) collective alarm relay. When other lamps fail, the relay closes for approximately 3 seconds before reopening (collective alarm retriggering).

When connected to the CAN bus the status of the lights can be visualized on Panel PCs and displays. When a lamp fails, an alarm is signalled acoustically with a buzzer and optically by flashing graphics on the display. The display automatically opens the alarm page and the acknowledgement button flashes red until the alarm is acknowledged.

The alarm text and flashing of the displayed lamp are shown until the defective lamp has been replaced or switched off. The alarm list shows all non-working lamps, with all unacknowledged alarms highlighted red.

In the event of a short circuit or overcurrent in the lamp circuit, semiconductor fuses in AHD-POS 10 stop the current. After elimination of the cause, the normal state is reestablished, without the necessity of manual intervention.

When the electronics of AHD-POS 10 fail, only monitoring is no longer possible. The lamp circuits are not interrupted so that the lamps can still be switched.

AHD-POS 10 signals its readiness for operation with its "Power" LED and its failure with its "Fault" LED.

Device Structure

AHD-POS 10 has a pluggable terminal block with 10 in- and outputs each for the lamps to be monitored, the power supply inputs (+) and (-), and the relay outputs for collective alarms. AHD-POS 10 is connected with a T-piece to the CAN bus with a Panel PC or display or other devices. If no further devices are connected, the CAN bus must be terminated with a termination resistor.

For installation there are four mounting holes in the base plate of AHD-POS 10. It is designed for installation inside a distribution box or switch cabinet.

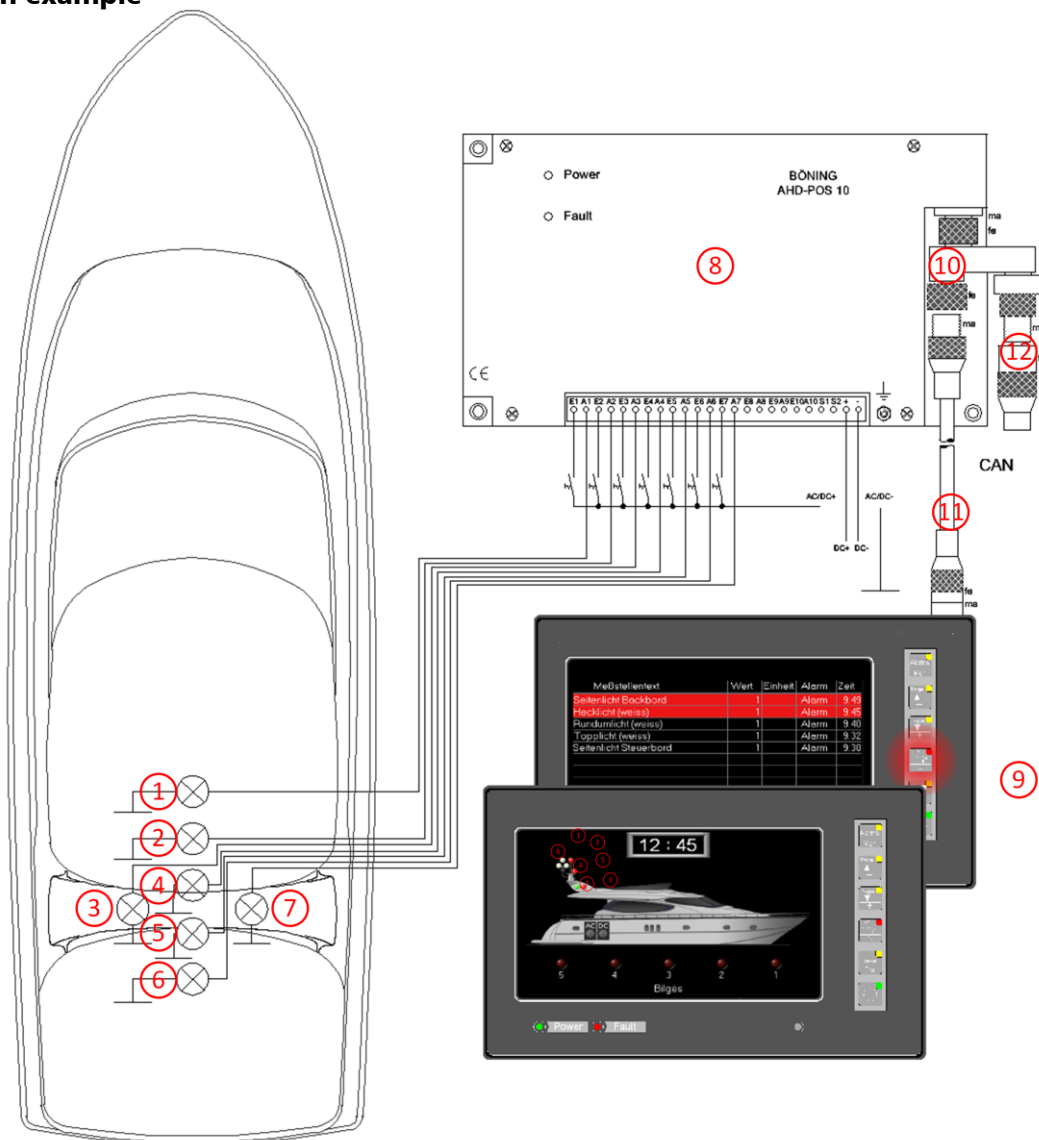
Installation

The inputs and outputs of AHD-POS 10 must be installed between switch and lamp. Terminal E1 designates input 1, A1 output 1 for connection with the monitored lamp 1, E2 and A2 the input and output for lamp 2 and so on till lamp 10. Panel PCs and display are connected in the CAN-Bus.

LED lamps

Whether LED lamps can be operated with AHD-POS 10 must be checked in each individual case according to the technical properties of the LED lamp.

Connection example



The illustration shows in an example with seven monitored lamps the navigation lights monitoring system AHD-POS 10 and a display with a customer specific representation of the ship and of the navigation lights and in the alarm list customer specific texts.

1. Allround light (white)
2. Allround light 1 (red)
3. Port sidelight
4. Top light
5. Allround light (red)
6. Stern light
7. Starboard sidelight
8. Navigation Lights Monitoring AHD-POS 10
9. Display
10. T-piece for CAN bus
11. CAN bus cable
12. Termination resistor for CAN bus

Dimensions

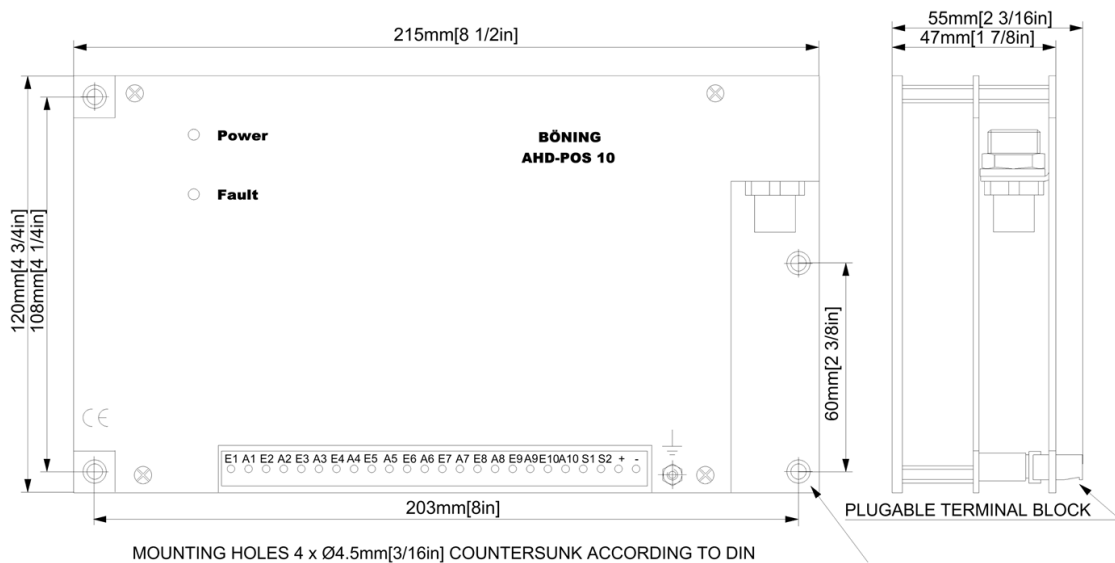


Image is similar.

Technical Data

Dimensions	215 mm x 120 mm x 55 mm
Weight	Ca. 0.55 kg
Ambient temperature	-10°C ... +65°C
Storage temperature	-30°C ... +85°C
Protection class	IP 00
Power supply	24 V DC (+30% / -25%)
Current consumption	Max. 150 mA (24 V DC)
Installation	Mounting plate

Interfaces	1 x CAN for the connection to displays
	1 x RS232 for internal purposes
	10 x input/output for lamps (Max. 40 W per lamp)
	1 x relay 40 V DC/1A for alarm signaling
Item number	10019