

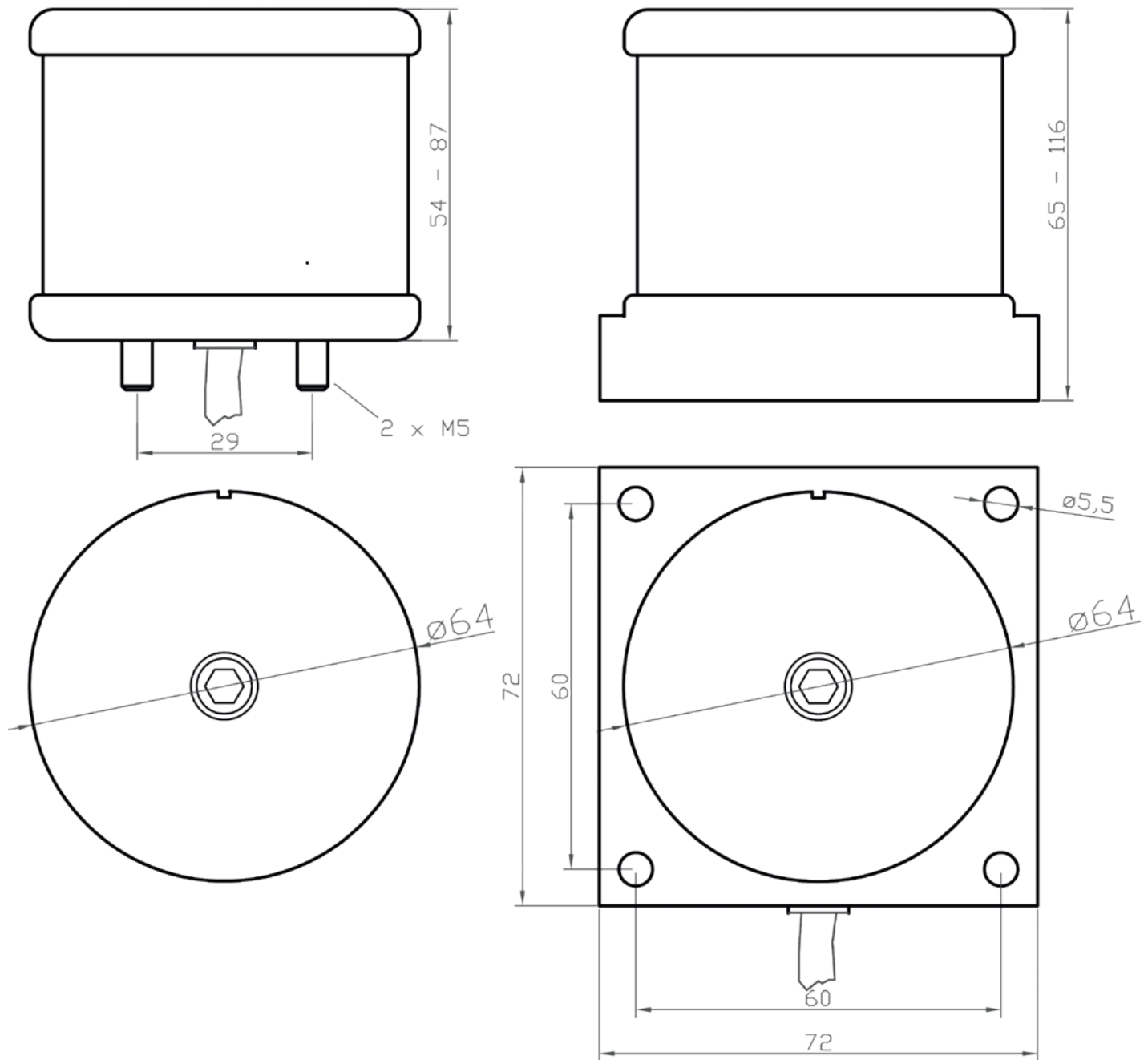
Professional Systems for Yachts and Commercial Vessels



LED Navigation Lights

including monitoring and control systems

Dimensions in Full-Scale



LED Navigation Lights

Light source	High Power LED
Operating temperature	-50 °C ... +55 °C
Storage temperature	-50 °C ... +80 °C
protection class	IP 68

More Light. Less Energy.

The high reliability and compact design of the new navigation lights make them suitable for installation on ships over 50 meters in length. For commercial shipping, a long service life and low maintenance costs are of crucial importance.

The newly developed bicolor side lights, in particular, offer remarkable advantages. Here, typical power consumption is reduced from 25 to 1.6 watts. Furthermore, the service life of the new LED technology is significantly longer than that of current systems available on the market.

We use very high-quality materials to manufacture our LED navigation lights, such as seawater-resistant aluminum and stainless steel. Weather-resistant lenses made of borosilicate glass guarantee long-term transparency.

Extensive endurance testing has confirmed the functionality and durability of the LED navigation lights, even under adverse seawater conditions. Thanks to high-performance LEDs, our navigation lights have a visibility range of over two or three nautical miles, and the masthead light even reaches over five or six nautical miles.

Classification

The Böning LED navigation lights are certified and approved in accordance to the EU regulations.



ATEX Certification

Böning LED navigation lights are now also available as an explosion protected version for zones 2 and 22.



Our LED navigation lights combine excellent technical characteristics with noble design. They are available in three versions:



Standard

Seawater resistant aluminum with hard anodized coating, much harder and seawater resistant than the traditional one



Classical

Polished brass housing for fans of beautiful classical design and traditional materials

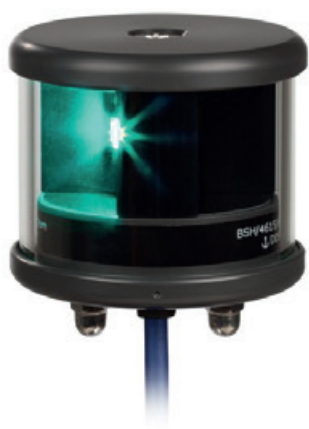


Base

Version with a square base for direct installation on horizontal surfaces

Double lanterns for vessels over 50 meters are also available.

Lights for Vessels up to 50 m.

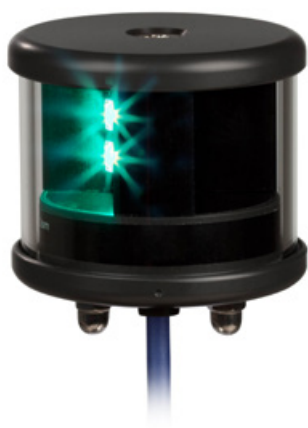


Type		Weight (g)	Power Consumption (W)	Visibility (NM)	Diameter/Height (mm) +	Voltage (V DC)
Red port 112.5°		330	1.0	2	64/54	12/24
Green starboard 112.5°		330	1.2	2	64/54	12/24
White stern 135°		330	1.0	2	64/54	12/24
Yellow towing stern 135°		330	1.3	2	64/54	12/24
Red stern 135°		330	1.0	2	64/54	12/24
White masthead 3 NM 225°		350	1.8	3	64/54	12/24
White masthead 5 NM 225°		370	5.0	5	64/54	24
White all-around 360°		300	1.5	2	64/54	12/24
Red all-around 360°		300	1.9	2	64/54	12/24
Green all-around 360°		300	1.8	2	64/54	12/24
Yellow all-around 360°		300	1.9	2	64/54	12/24
White signal 180°		350	2.4	2	64/54	12/24
Red signal 180°		350	2.8	2	64/54	12/24
Green signal 180°		350	2.9	2	64/54	12/24
Yellow signal 180°		350	1.6	2	64/54	12/24
Bicolor* 112.5°/112.5°		330	1.6	2	64/54	12/24
Tricolor*		330	2.4	2	64/54	12/24
Tricolor/Anchor*		350	1.5/2.4	2	64/54	12/24

* max. vessel length 20 m

+ base version is 11 mm higher and 170 g heavier.

Lights and Double Lights for Vessels over 50 m.



Type		Weight (g)	Power Consumption (W)	Visibility (NM)	Diameter/Height (mm) +	Voltage (V DC)
Red port 112.5°		330	1.9	3	64/54	12/24
Green starboard 112.5°		330	2.0	3	64/54	12/24
White stern 135°		330	1.7	3	64/54	12/24
Yellow towing stern 135°		330	2.1	3	64/54	12/24
Red stern 135°		330	1.9	3	64/54	12/24
White masthead 6 NM 225°		510	9.8	6	64/54	24
White all-around 360°		300	2.9	3	64/54	24
Red all-around 360°		300	3.3	3	64/54	24
Green all-around 360°		300	3.2	3	64/54	24
Yellow all-around 360°		300	3.4	3	64/54	24
White signal 180°		380	2.4	3	64/54	24
Red signal 180°		380	2.8	3	64/54	24
Green signal 180°		380	2.8	3	64/54	24
Yellow signal 180°		380	2.9	3	64/54	24
White anchor manoeuvre 360° #		300	4.5	5	64/54	24
White all-around flash 360° #		300	2.9	3	64/54	24

not available as double light

+ base version is 11 mm higher and 170 g heavier.

Other versions available upon request

Accessories for LED Lights.



Lamp holder bow/stern



Lamp holder starboard side



Lamp holder port side



Lamp holder mast



Lamp holder top



Lamp holder mast-combi



**LED spotlight matching
lamp holder mast-combi**

10° beam angle
22° beam angle
40° beam angle

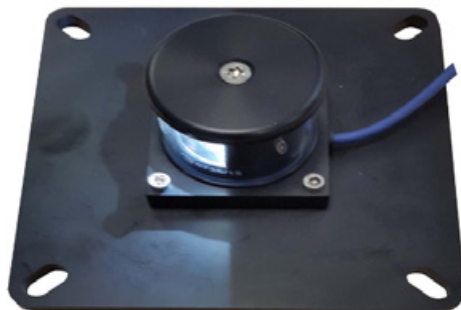


Mast-combi protection



Holder wind indicator

Adapter Plates for LED Lights.



AHD-SQA adapter plate for old bulb bases

Now you can replace your navigation lights with the pitch of 145 to 156 mm without tags.



Top view



Bottom view

AHD-RB round adapter plate



Top view



Bottom view

AHD-SQB square adapter plate



Monitoring and Control Systems for Navigation Lights

The modular AHD-DPS02 controls and monitors up to 42 navigation and signal lanterns on board vessels. Due to its modular structure, the system can be matched to customer specific requirements. It consists of one basic module and up to 4 extension modules as well as a customer specific operation panel. The system is available in different versions for all customary voltages on board vessels, and it can be used with conventional or LED lanterns.

The minimum configuration consists of a basic module for 14 lanterns and of a standard operation panel. By using additional basic modules, any number of lanterns can be controlled and monitored.

The lanterns are controlled with an operation panel, which provides one operating button and one LED status light for each lamp circuit. Depending on the requirements, the operation panels can be delivered in their standard size or according to the customer's wishes. Additional operation options for touch-screen displays and panel PC are also available.

The lamp current is provided either by the main feed or a second, separate feed (emergency feed). If one of these power feeds fails, the power supply can be manually switched over to the other. Both currents are continuously monitored.

The internal electronics are automatically supplied by one of the available power sources. If one lamp channel is switched off, both switch contacts are disconnected from the power supply with a relay. The lanterns can be controlled manually during electronics failure.

A collective alarm (closed) contact reports current error conditions to a higher level alarm system. The CAN bus or Modbus enables connection to external systems for convenient control and visualization.

AHD-DPS02 G14

14 Channel Basic Module for Navigation and Signal Lights Control (24 V LED)

The basic module for controlling and monitoring navigation and signal lamps has been constructed for 14 lamp circuits, which can be controlled and monitored independently; lamp failures, short-circuits, or wire breaks are signaled as alarms. In addition, operating time monitoring and end-of-life warning ($t < 2000$ h) can be configured for each lamp circuit. The system supports a dual power supply, which switches over to the emergency feed in case of main feed failure. Both feeds are monitored.

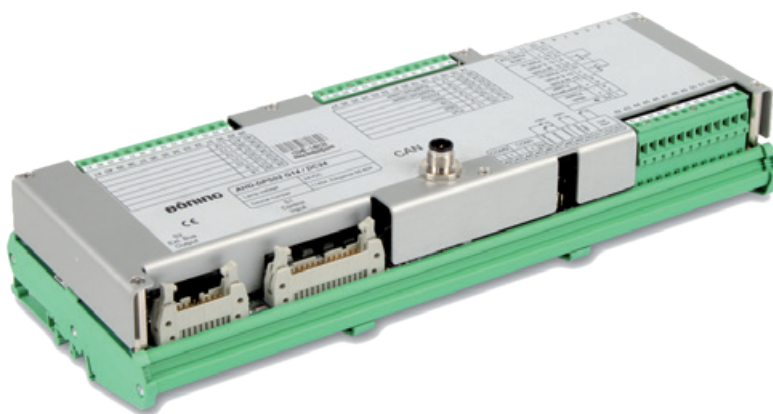
Additional features:

- ✚ Direct switching of the lamps is possible even in case of electronics failure
- ✚ All switching channels are electronically protected and equipped with a fuse element.
- ✚ The system can be expanded to up to 42 lamp circuits with the extension modules AHD-DPS02 A07
- ✚ Optional communication modules AHD-DPS02 GC (RS-422, RS-485, CAN) available on request

Electronics unit for 24-volt LED lamps, suitable for carrier rail mounting (TS32/35).

Versions appropriate for:

- **24 VDC LED lamps** (item no. 22895)
- **230 VAC LED lamps** (item no. 22913)
- **115 VAC LED lamps** (item no. 22914)



AHD-DPS02 G14

Power supply (electronics unit)	24 V DC (+30% / -25%)
Current consumption	100...420 mA (24 V DC)
Lamp voltage	24 V DC (+30% / -25%)
Operating temperature	-30 °C ... +70 °C
Storage temperature	-50 °C ... +85 °C
Weight	approx. 0.98 kg
Degree of protection	IP 20
Dimensions (W x H x D)	322 mm x 128 mm x 57 mm
Inputs	14 x lamp output, 2-pole switched and protected 2 x communication bus internal (operating unit, extension module) 1 x CAN bus 3 x Output (Relay contact, max. switching voltage 32 VDC)
Option (AHD-DPS02-GC)	Modbus RS 485/422/CAN
Installation	On DIN rail TS 32 and TS 35
Approvals	ABS, BV, CRS, DNV, LR, PRS, RS

AHD-DPS02 A07

7 Channel Extension Module (24 V LED)

Extension module for 7 lamp circuits to extend an existing basic module for monitoring and controlling navigation and signal lamps. Every system can be extended with up to 4 extension modules to a maximum of 42 lamp circuits.

Versions appropriate for:

- **24 VDC LED lamps** (item no. 22911)
- **230 VAC LED lamps** (item no. 22907)
- **115 VAC LED lamps** (item no. 22909)



AHD-DPS02 B14

Control Panel for Navigation and Signal Light Systems

Operating panel for navigation and signal lamp monitoring AHD-DPS02 G14 for controlling 14 lamp circuits.

- + Compact design for installation in consoles, panels, and switch control boxes
- + Individual ON/OFF operating buttons for 14 navigation and signal lamps
- + Integrated signal LEDs for displaying lamp status, lamp fault, supply fault, and system failure
- + Additional warning indicator for the lamp's rest-of-life (2,000 hours remaining)
- + All signal LEDs are automatically dimmed
- + Integrated alarm buzzer and acknowledgement key with lamp test function
- + Optional switch for releasing an existing remote control (via Basic Module AHD-DPS02 G14's CAN port)



AHD-DPS02 BS

Customer Specific Control Panel

For controlling our navigation and signal lamp monitoring system AHD-DPS02 G14.

Identical technical qualities and options as standard operating panel (see AHD-DPS02 B14, item no. 11414 or variant). Lamp control elements and labels are arranged individually, according to tabular or graphical templates.

Depending on the application and number of lamp channels to be controlled, various sizes are available.

Device for installation in consoles or switch boards.

Available versions:

- **AHD-DPS02 B14** with 14 channels (item no. 11414)
- **AHD-DPS02 B21** with 21 channels (item no. 11481)
- **AHD-DPS02 B28** with 28 channels (item no. 12521)
- **AHD-DPS02 B35** with 35 channels (item no. 12522)
- **AHD-DPS02 B42** with 42 channels (item no. 12382)

AHD-DPS02 B14

Power supply	24 V DC (+30% / -25%)
Current consumption	400 mA @ 24 V DC
Operating temperature	-30 °C ... +70 °C
Storage temperature	-50 °C ... +85 °C
Weight	Approx. 0.5 kg
Degree of protection	IP 22 (front side with protection cover IP 54)
Dimensions (W x H x D)	150 mm x 150 mm x 80 mm
Combined inputs / outputs	1 x connection to basic module (ribbon cable)
Approvals	ABS, BV, CRS, DNV, LR, PRS, RS

Device for installation in consoles or switch boards.

Available Versions:

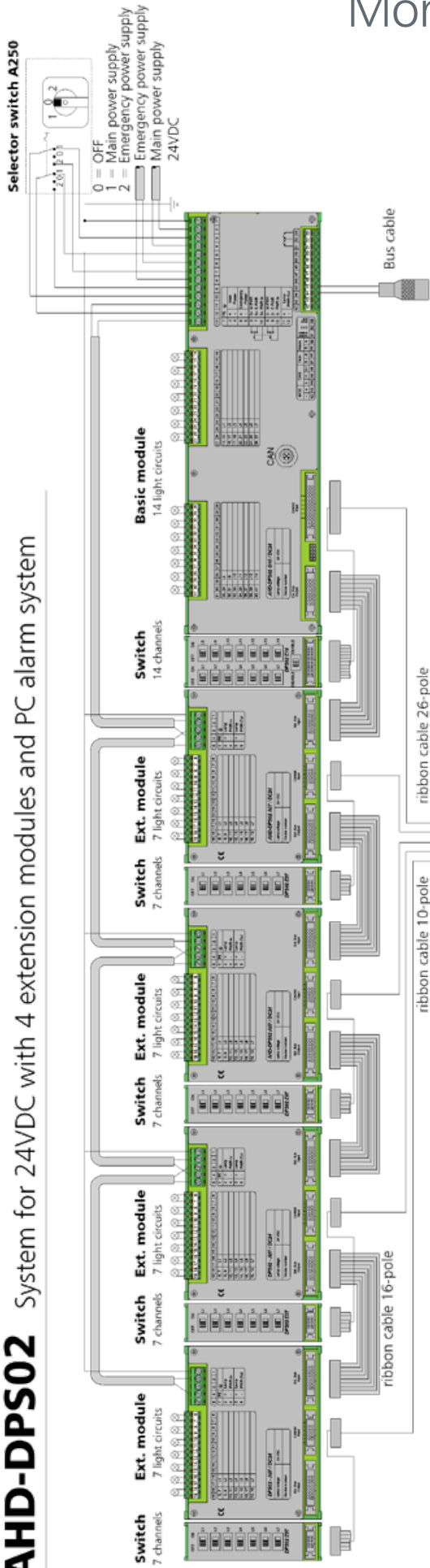
- **with front frame 150 mm x 150 mm** (item no. 10945)
- **with front frame 294 mm x 150 mm** (item no. 11061)

AHD-DPS02 BS

Power supply	24 V DC (+30% / -25%)
Current consumption	400/600/800 mA @ 24 V DC
Operating temperature	-30 °C ... +70 °C
Storage temperature	-50 °C ... +85 °C
Weight	Approx. 0.5 kg / 0.7 kg / 0.9 kg
Degree of protection	IP 22 (front side with protection cover IP 54)
Dimensions (W x H x D)	150/294 mm x 150 mm x 80 mm
Combined inputs / outputs	1 x connection to basic module, up to 4 connections to extension modules
Approvals	ABS, BV, CRS, DNV, LR, PRS, RS

AHD-DPS02

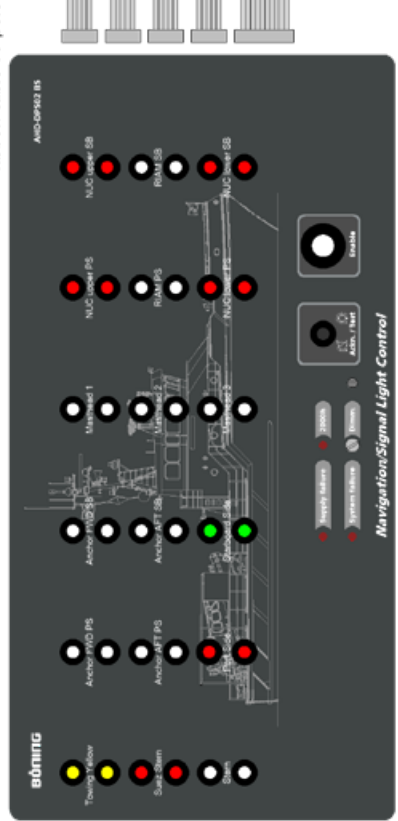
System for 24VDC with 4 extension modules and PC alarm system



Monitoring and Control System (Applikation Example)



**15" Touchscreen display AHD 1215 (flush-mounted)
or standard PC from alarm system**
Control and monitoring via Modbus RS485 or CAN bus



Control panel

Control panel/switch for lights control during system failure
(required by classification society)

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