

## REFIT

### Data Station AHD-BE1-IO and Color Display to Replace BE1-IO/BE1-A

## CURRENT



## REFIT



In 1996, Böning Automationstechnologie developed an alarm and safety system for a well-known German manufacturer's maritime diesel engines. It consisted of the Input and Output Unit BE1-IO and the Display Unit BE1-A. This system is known in insider circles; about 10,000 engines were equipped with it. Because these are mostly dual engine systems, approximately 5000 vessels, mostly yachts, are affected.

With the refit package AHD-BE1-IO and AHD 570 we are introducing here, we offer modern and elegant exchange components to replace the old alarm system. With current color display technology, the components ensure an up-to-date visual appearance and provide extended and improved functionality. The Data Station AHD-BE1-IO is compatible with the preinstalled sockets of the already present BE1-IO (e.g. stock no. 51.27720-7003).

As an extension to the existing inputs and outputs, four additional input channels (2 x 4-20 mA, e.g. for tank contents measuring, for PT1000 temperature measurements or binary (Setting with jumper and in configuration), 2 x NiCrNi for measuring exhaust gas temperatures) are available, which can be activated if necessary. The data transfer to two displays (bridge and possibly flybridge) is performed via CAN bus.

Currently the color display AHD 570 is used for displaying the engine data and alarms.

The display is intended to replace the device BE1-A (e.g. stock no. 51.27720-6023 or 51.27720-6020); all BE1-A device variants are available on request.

The color display is designed for use on the bridge and outdoor use on the flybridge. Modern display technology ensures a brilliant presentation.

### Display Pages

The engine data and alarms are displayed on a total of three pages.

On the first page, the engine speed as well as the engine oil pressure, coolant temperature, and charge air temperature are displayed.



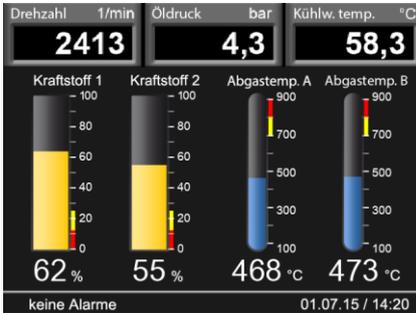
Main page

An integrated configuration page allows the individual adjustment of the display, such as brightness, time/date, units (metric/Imperial). The languages German and English are present by default; a total of 8 languages is possible.

Configuration	
Adjust clock	14:08 24h
Date	23.06.2009
Language	English
Units	metric (°C, bar, l/h)
Min. brightness	* 10 %
Diagnosis page	call page
Limit values	call page

Configuration page

An additional page shows the extension of the new device generation compared to the old devices. Here, you can view the content of fuel tanks as well as the exhaust gas temperature.



Possible extension: Tank and gas temperature page

The most important engine data are also presented in digital format.

Sensors for this extension are available on request:

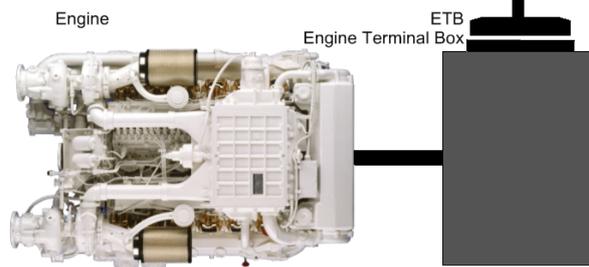
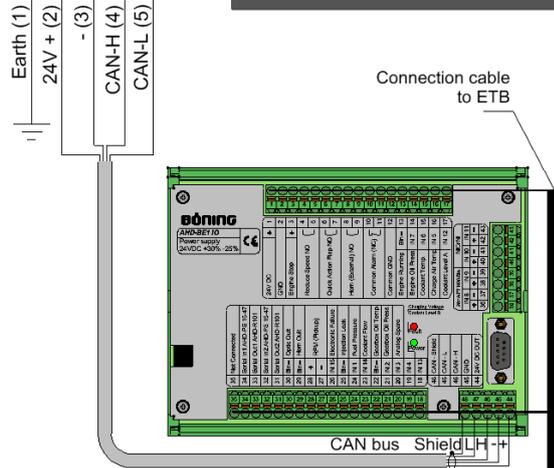
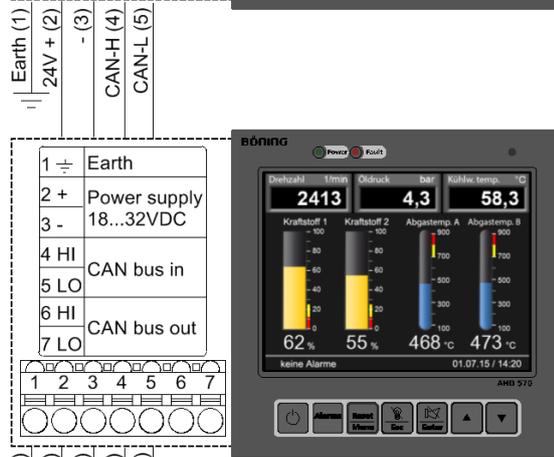
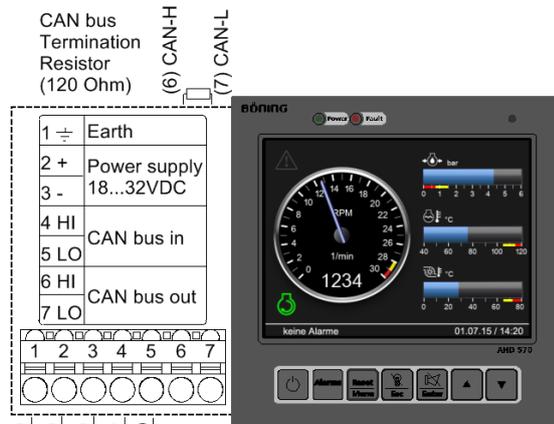
Certified by Germanischer Lloyd the hydrostatic tank level sensor AHD-S 201 is predestinated for ship building applications. Its temperature operating range up to 125°C and operating within explosion risk area make it possible to show the pressure consequently the level of the fuel tanks. The sensor is available for different pressure ranges (Tank heights) as screw-in version (see illustration) or as submersible version (installation at the tank's top).



The exhaust gas temperature sensor has to be placed into the exhaust gas tube after the turbo charger to warn of too high temperatures which may damage the engine.



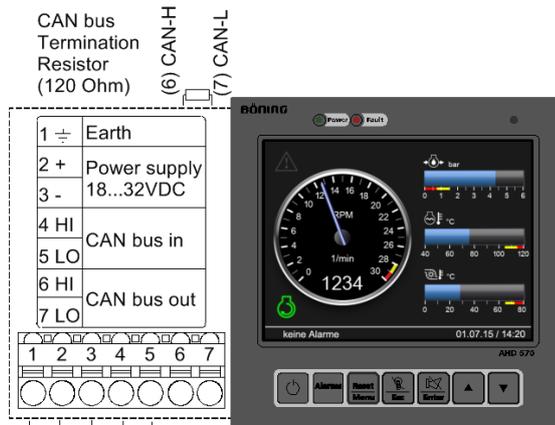
### Standard-Version



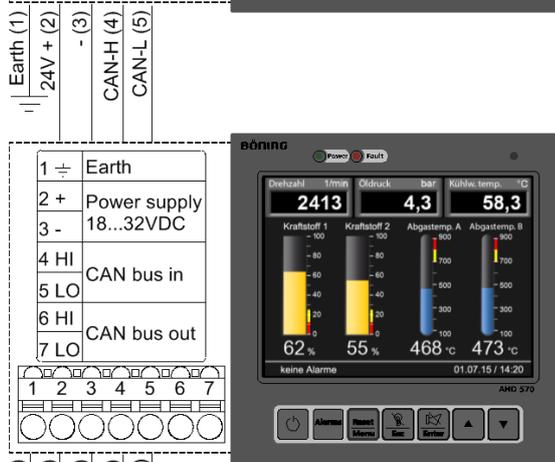
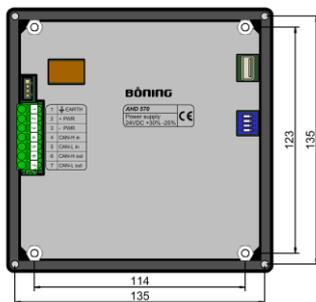
The alarms page is automatically opened when an alarm is triggered. It displays all current alarms, warnings, and sensor errors chronologically with the date and time in tabular format.

Revolution 1/min	Oil press. bar	Coolant temp. °C
<b>2413</b>	<b>1,2</b>	<b>58,3</b>
Alarms		Date / Time
Lube Oil Pressure		23.06.09 / 12:52
1/1 1 Alarm (s) active		23.06.09 / 13:36

### Extension with Capture of Sensor Data



### Technical Data

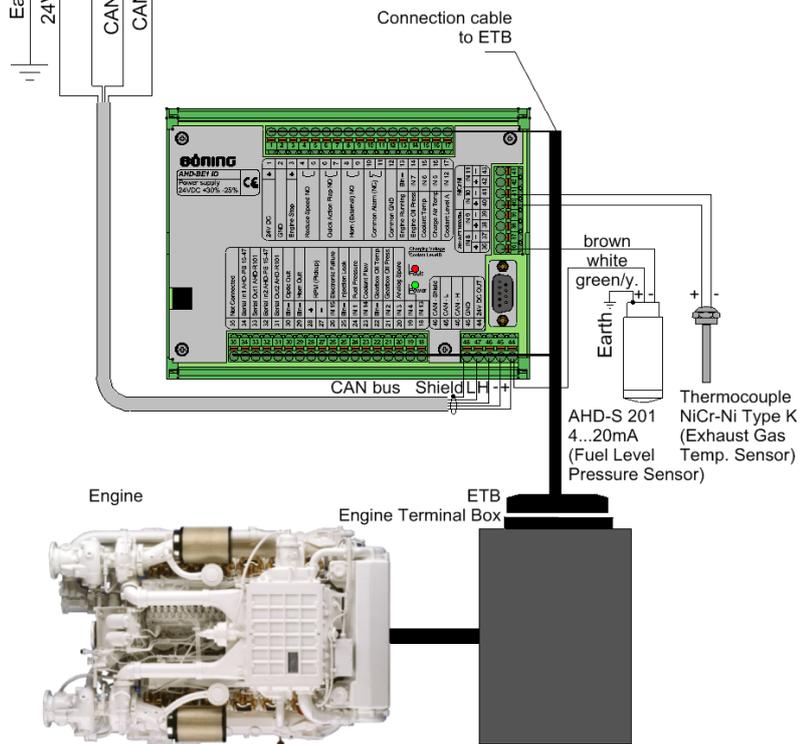


#### AHD 570

Dimensions	144 mm x 144 mm x 43 mm
Panel Cutout	131 mm x 131 mm
Operation Temperature	-25°C ... +70°C
Protection Class	IP 56 (front)
Power Supply	24VDC (+30%/-25%), 700mA
Display	5.7" LCD Color Display (500 cd/m <sup>2</sup> )
Ports	1 x CAN Bus (Communication)
Approvals	DNV GL, LR, RS

#### AHD-BE1-IO

Dimensions	167 mm x 125 mm x 57 mm, mounting on rail TS32 / TS35
Operation Temperature	-25°C ... +70°C
Protection Class	IP 20 (rear side)
Power Supply	24VDC (+30%/-25%), 300mA
Ports	1 x CAN Bus (Communication)
Inputs/Outputs	matches BE1-IO Additionally: 2 x NiCrNi 2 x 4-20 mA, binary or PT1000 (Setting by jumper and in configuration)
Approvals	On request



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