

# Operating instructions

BlueCool S-Series



## 1 About This Document

Special aspects are pointed out with the following symbols:



### **CAUTION**

Particular danger of injuries or fatal accidents



### **ATTENTION**

Particular danger of damage to components



### **FLAMMABLE**

Particular danger of fire and explosion



### **NOTE**

Note on a special technical feature

## 2 Safety precautions



### **CAUTION**

#### **Moving parts!**

Danger of injury, damage to air-conditioning system.

- ▶ Only operate the air-conditioning system when installed.



### **CAUTION**

#### **Hot surfaces!**

Danger of burns.

- ▶ Do not touch the chiller unit during operation.



## **ATTENTION**

### **Danger from escaping refrigerant!**

**If you perceive a hissing noise and mist, refrigerant may escape and the air-conditioning system may be defective.**

**Please proceed as follows:**

- ▶ Ventilate and leave room, interrupt power supply and secure against switching on again;
- ▶ Go on deck;
- ▶ Contact Webasto Service Centre or shipyard.



## **FLAMMABLE**

### **Ignition of surrounding gases or highly flammable liquids by sparking of the air-conditioning system!**

Danger of fire and explosion of ship or of petrol station.

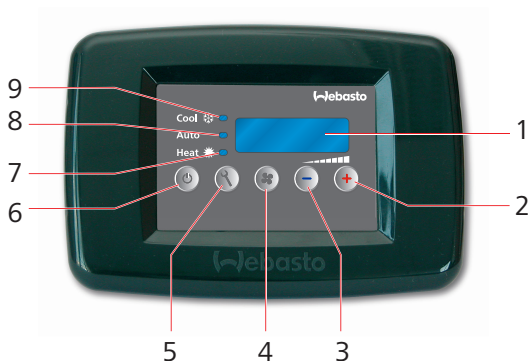
- ▶ The air-conditioning systems must ALWAYS be switched off during refuelling or while in a petrol station area.

Please read this information carefully before you start up the system!

If you require additional information about special applications in the marine sector or are unsure about an application option, please contact your authorised Webasto Marine dealer or visit our website at the following internet address:

- [www.webasto.com](http://www.webasto.com) or
- [www.webasto.us](http://www.webasto.us)

### 3 Operation



*Digital chiller control element*

- 1 Display
- 2 Plus button for changing setpoint temperature  $\oplus$
- 3 Minus button for changing setpoint temperature  $\ominus$
- 4 Fan setting button for controlling fan speed  $\text{⊗}$
- 5 Function button for setting/programming  $\text{Ⓜ}$
- 6 "On/Off" button  $\text{Ⓜ}$
- 7 LED display for heating mode
- 8 LED display for automatically switching between operating modes
- 9 LED display for cooling mode

The BlueCool S-Series air-conditioning system is operated with the control element that enables access to all functions for normal operation of the air-conditioning system.

### 3.1 Switching on system

After connecting the power supply, first all LEDs and all segments of the numeric display flash for a few seconds, then "INIT" briefly appears on the control element. The display "50H" or "60H" follows, depending on which power supply the system is operated on, for example 230 V/50 Hz or 240 V/60 Hz.



If the system was switched on before cutting off the power supply, the current room temperature appears on the control element and the system starts up automatically in the set operating mode. Otherwise the control element goes dark and the display is in the stand-by mode.

- Switch on the system by pressing the "On/Off"  button (6).

Now the electronic controller assumes the step-by-step start-up of the air-conditioning system and the standard operation. The control element shows the current cabin temperature of the cabin in which the control panel is mounted or where the cabin temperature sensor is located (if it is in another cabin). After approx. 20 seconds, the control element provides information on which operating mode (cooling or heating) the system is started in. The selection is dependent on the set setpoint temperature and the room temperature measured by the cabin temperature sensor. After another approx. 50 seconds, the compressor is switched on and the standard mode begins. The sea water pump always runs as soon as the system is switched on and the compressor starts up.

If only the system is switched on and no change is made on the control element, the compressor and the sea water pump start up with a delay of 20 sec.






### 3.2 Switching off system

The system can be switched off by pressing the "On/Off" button  (6). The condition for this is that the user is in the start menu with the display of the room temperature. On the programming level (temperature, fan), the "On/Off"  button (6) is used to confirm the setting and not to switch off the system.

### 3.3 Selecting cooling mode/heating mode

The system selects cooling or heating operating mode depending on the required temperature. The prerequisite is that the system has been configured for automatic switch-over between cooling and heating. For information on configuring the operating modes please contact your authorised Webasto Marine dealer.

### 3.4 Setting setpoint temperature






- Set the setpoint temperature in accordance with your own preferences.
- Press the Plus button  (2) or Minus button  (3).  
The setpoint temperature is displayed.
- Press the Plus  button (2) or Minus  button (3) to change the setpoint temperature.
- Confirm the entry by pressing the “On/Off” button  (6) or wait at least 5 seconds so that the entered value is automatically adopted.


### 3.5 Standby mode

The control element will assume standby mode if no button is pressed for 5 minutes. The corresponding operating mode LED will then flash discretely every 20 seconds.

Press any button to return to the normal display.

### 3.6 Set the fan speed

- Switching on system.
- Press the fan setting button  (4).  
The current fan speed is displayed.
- Press the Plus button  (2) or Minus button  (3) to change the fan speed.
- If the Plus  button (2) is pressed again when the highest speed has already been selected, automatic fan mode is switched on and “**b A**” appears on the control element. Pressing the Minus button  (3) exits the automatic fan mode and returns to the manual mode.

Confirm the entry by pressing the “On/Off” button  (6) or wait at least 5 seconds so that the entered value is automatically adopted.

### 3.7 Access code

Further setting options for the BlueCool S-Series air-conditioning system are reserved for the technician and require an access code.

## 4 Malfunctions

### 4.1 Troubleshooting



#### CAUTION

Troubleshooting only by professionals! Troubleshooting requires comprehensive knowledge on the design and operation of the individual components of the air-conditioning system and may only be carried out by authorised professionals trained by Webasto for this purpose.

If faults occur, the system must be switched off.

### 4.2 Faults that are displayed

The following malfunctions are displayed directly on the digital control element as a code (e.g. A02). Each time one of these fault codes appears, the system is stopped for approx. 60 seconds and then a restart is attempted. If a malfunction occurs more often than 6 times consecutively within 30 minutes, the system is completely shut down and the fault code is displayed continuously. No further restarts are attempted and the user should have the fault rectified and then reset the system by switching it off or by temporarily interrupting the power supply to the system.

### 4.3 Fault and status codes

<b>Fault code Display</b>	<b>Description</b>	<b>Possible cause</b>	<b>Correction</b>
AAA	Undervoltage	Switch-off in case of undervoltage. Power supply below set undervoltage value for longer than 5 seconds. The cause is probably excessively long power cable for the on-shore connection, overloading or an insufficiently high power generator output.	Use a on-shore power connection with a more stable power supply. Use a shorter power cable for the on-shore connection. Switch off other electrical loads. Please contact your authorised Webasto Marine dealer.



Fault code Display	Description	Possible cause	Correction
A01	Compressor shut-down due to low pressure	Pressure switch defective or power circuit interruption/short circuit.	Please contact your authorised Webasto Marine dealer.
		COOLING MODE: Air supply insufficient.	Check air supply. Difference between air inlet/air outlet temperature of evaporator at least 4 K.
		HEATING MODE: -Sea water flow rate insufficient or sea water too cold (Temperature below 6 °C). Sea water strainer blocked or no intake.	Check the flow rate of the sea water circuit at the sea water outlet. Difference between condenser inlet/outlet temperature approx. 5 K. At sea water temperature <6 °C: Heating not possible in reverse heating operation. Clean sea water strainer and bleed sea water circuit.
		Refrigerant shortage.	Please contact your authorised Webasto Marine dealer.

Fault code Display	Description	Possible cause	Correction
A02	Compressor shut-down due to high pressure	Pressure switch defective or power circuit interruption/ short circuit.	Please contact your authorised Webasto Marine dealer.
		COOLING MODE: insufficient sea water cooling. Sea water strainer soiled or no intake.	Check the flow rate of the sea water circuit at the sea water outlet. The minimum flow rates must be complied with. Clean sea water strainer and bleed sea water circuit.
		HEATING MODE: Air supply insufficient.	Check air supply. Difference between air inlet/air outlet temperature of evaporator at least 4 K. Please contact your authorised Webasto Marine dealer.
A09	Fault, cabin temperature sensor	Cabin temperature sensor defective, break/short-circuit in electrical circuit, cabin temperature sensor not connected.	Please contact your authorised Webasto Marine dealer.

Fault code Display	Description	Possible cause	Correction
A10	Fault in temperature sensor of evaporator	Temperature sensor of evaporator defective or power circuit interruption/short circuit.	Please contact your authorised Webasto Marine dealer.
INIT	Initialisation procedure or system blocked.	Electrical wiring defective, interruption in power circuit/short circuit.	Please contact your authorised Webasto Marine dealer.
n/a	No pc-board output.	Fuse faulty or break/short-circuit in this electrical circuit.	
		Pc-board damaged by high voltage (RT1 blown)	
		Electronic relay (TRIAC) defective.	
n/a	Compressor not running.	Compressor defective or break/short-circuit in compressor wiring.	Please contact your authorised Webasto Marine dealer.
		Compressor overload, or overload protection at top of compressor faulty.	

Fault code Display	Description	Possible cause	Correction
n/a	No or insufficient cooling or heating capacity.	Poor air or sea water flow, soiled or circulation blocked.	Ensure adequate air or sea water flow (see A01 and/or A02).
		Refrigerant shortage.	Please contact your authorised Webasto Marine dealer.
		Oil block.	<p>Leave air-conditioning system running in heating mode.</p> <p>Call out a refrigerant specialist if necessary. Technical datasheet available.</p>
n/a	No or insufficient cooling or heating capacity.	Compressor fault.	Have checked by refrigerant specialist.
n/a	Incorrect cabin/ambient temperature or water temperature displayed.	Temperature sensor positioned incorrectly, subject to interference or display values falsified.	Check whether the sensor is subject to direct fault sources such as direct sunlight or devices radiating heat. Please contact your authorised Webasto Marine dealer.

## Faults not displayed on control element

1. After switching on, the system does not react.

Check:

- The power supply
- The Fuses in supply lines
- fuses on pc-board, etc.

2. The compressor starts up, however no sea water exits from the sea water outlet.

If the sea water pump is running:

- Check whether the shut-off valves are opened.
- Check whether the sea water strainer is clogged.
- There could be air in the pump head causing the pump to malfunction.  
Bleed the air out of the sea water line, e.g. with a bleeder valve downstream of the pump.

If the sea water pump is not running:

- Check the power supply to the sea water pump.
- The pump rotor may be blocked by dirt. If possible and accessible, using a tool turn the pump rotor from the motor side until it moves freely.

3. The compressor and the sea water pump are running, but neither the heating mode nor the cooling mode function satisfactorily.

- Allow the fan to run in the automatic fan mode.
- Check the air ducts/the fan.
- If the sea water flow rate is too low, the sea water in the condenser can freeze in heating mode, blocking and damaging the system.
- Heating mode takes a long time to start up.  
This is normal when the sea water is very cold. When the temperature of the sea water drops below approx. 6 °C, the heating efficiency decreases and the air-conditioning system takes a long time before producing the expected heat.
- If, after checking the above points, the system output is still unsatisfactory, please contact your authorised Webasto Marine dealer.

In multilingual versions the German language is binding.

The telephone number of each country can be found in the Webasto service centre leaflet or the website of the respective Webasto representative of your country.

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