


Category: Air Conditioning

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Description: Polar Cab ES Engine OFF Cab Cooling Operation Instructions (v 1.8)



WARNING: Cancer and Reproductive Harm
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Overview

Polar Cab Electric System (ES) is an engine off cab cooling solution designed for off-highway machinery. The Polar Cab ES provides engine-off operator comfort by maintaining cool cabin temperatures during wait and load situations. The Polar Cab ES engine-off air conditioning system effectively maintains a preconditioned cab under hot, humid and full sun load conditions.


Operators can now turn off their engines and keep comfortable, save fuel, reduce idling and increase productivity with Webasto technology.



This is not an Original Equipment Air Conditioning System replacement.

Basic Operation

This section will discuss the different functionalities contained in the Polar Cab ES controller. This controller will be located in a convenient location for the machine operator.

When the controller is first turned on with the power button  the software version of the controller will appear. The controller will then proceed to perform a self-check on all system components. If problems are found with the temperature sensor, the corresponding error will appear on the screen and further diagnosis will be required. The controller will then display the home screen, see the image below.






Button Descriptions

**TURBO - SET COOLING TO
 MAXIMUM
 BLOWER SPEED
 A/C ON/OFF**




























**SETPOINT - UP
 SETPOINT - DOWN
 POWER / ENTER**

LCD Icon Descriptions

Icon	Description
T	Turbo Mode
	Blower Activated
	Blower Mode – Auto Activated
	Air Conditioning Mode Activated
	Air Conditioning Mode – Auto Activated
85%	Compressor Speed Indicator (0% - 85%)
72°F	Cab Temperature
	Blower Speed Indicator

Menu Descriptions

Icon	Button	Description
	Turbo Mode	For one touch maximum cooling functionality. Full blower and compressor speed. System must already be in A/C mode for this feature to activate. NOTE: Compressor duty-cycle is limited to 85%.
	Blower Adjust / Ventilation Mode	Allows for blower speed selection. See *Blower Operation Mode for further information.
	A/C Mode	When cooling mode is selected, the compressor will turn ON automatically when the cab temperature is higher than set-point, and turn OFF automatically when the temperature is lower than set-point.
	*Blower Operation Mode: Automatic or manual	The controller has two-operation modes, manual mode (Low, Med, High), or automatic mode. In automatic mode, the blower speed will vary based on the cab temperature. In manual mode, the user has the ability to set the blower speed to one desired speed. Press any button on the control panel to access the home screen. Press the blower button  to select the blower speed screen. Pressing the  or  buttons will cycle through the blower speeds and auto mode: low, medium, high, AUTO. After 3 seconds the controller will return to the home screen.

	<p>System Operation Mode: Auto Start</p>	<p>The Polar Cab ES has the capability to start the system if the engine is OFF and the ignition is ON. The factory default for Auto Start feature is Enabled.</p> <p>When Auto Start is enabled and the system is in standby the power button  will flash once every three seconds. When the system has started in Auto Start mode the power button stays illuminated. In Auto Start Mode there is no need for user interface.</p> <p>To switch between these modes follow the proceeding steps.</p> <p>Begin by pressing the power button  to enter standby more (power button illuminated).</p> <p>Press and hold the  and  buttons to enter the user preferences mode.</p> <p>Use the  or  buttons to select Auto Start and press the power button  to select the option.</p> <p>Use the  or  buttons to enable or disable Auto Start.</p> <p>Refer to Auto Start for information regarding how Auto Start responds to different engine and ignition states.</p>
 	<p>Set Point Arrows</p>	<p>Set-point is the temperature desired inside the vehicle. To adjust this, use the  or  buttons. The set point temperature will blink on the display, press again until the desired temperature is reached.</p>
	<p>Power / Enter Button</p>	<p>When the power button  is pressed the controller will activate and will show the software version on the display, then the ambient temperature.</p> <p>To make the panel return to standby mode, press and hold the power button  up to 3 seconds.</p>
	<p>User Preferences</p>	<p>To enter user preferences, press simultaneously and hold the  and  set point arrows for 3 seconds. A menu will appear allowing the user to select the desired temperature unit, LCD display backlight preference, and to enable/disable Auto Start mode. While in these selection modes, the power button  is used to confirm the user's selection.</p> <p>NOTE: There are other settings in the User Preferences menu that are only accessible by the manufacturer.</p>

Settings

Description	Default Setting
Voltage Operating Range	23V – 30V
Temperature Range (61°F – 86°F)	16 °C – 30 °C (61°F – 86°F)
Blower Speed	Auto / Low / Medium / High
Low Voltage Disconnect	23V for 30 seconds will result in shut-down

Additional Settings

To access the Settings Menu hold the up and down arrow at the same time for 3s. The following settings are adjustable by the user. Some settings are locked by the manufacturer.

Setting	Description
Temperature Unit	Ability to change between Fahrenheit and Celsius
LCD Screen Brightness	Adjust the brightness / contrast of the LCD screen
Failures	SC = Return temperature sensor short circuit OP = Return temperature sensor open NOTE: Descriptions of the fault codes is available through the User Preferences Menu. See User Preferences for more information.
Auto Start	Enables system to start automatically under certain conditions. See Auto Start below for more information.

Auto Start

Auto Start is enabled by default. The following table details Auto Start functionality.

Engine/Ignition State	Engine OFF	Engine OFF	Engine ON
	Ignition ON	Ignition OFF	Ignition ON or OFF
Operating Condition	AUTO START: the unit will start – dependent on temperature set point and cab temperature. The LED flashes to indicate when the system is in Auto Start Mode. MANUAL START: User has control of the system NOTE: Auto Start is the default condition, if Auto Start is disabled the system must be activated manually.	Manual start	The unit is not functional

Initial Start

1. Make sure all interior / exterior panels and components removed during installation have been re-installed per manufacturer's recommendations.
2. Verify all electrical harnesses have been properly affixed and are clear of any moving parts.
3. Shut engine off and turn the Polar Cab ES ON using the power button on the controller. Verify cold air is coming out of vents of interior air handler.

If you have any questions, contact our technical support team at (800) 860-7866 or via email at: info-us@webasto.com.