

## Mabru Power Systems Marine Troubleshooting Guide 2025

Error Code	Definition Of Error	Possible Causes	Possible Corrections
<b>1</b>	Return temperature sensor error reading (Sensor should be located in front of the return vent)	<ul style="list-style-type: none"> <li>• Possible failure of room temperature sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Confirm RJ45 terminals</li> <li>• Replace display cable (standard CAT5) sensor</li> <li>• Replace return temperature</li> </ul>
<b>2</b>	Evaporator Temperature Sensor error	<ul style="list-style-type: none"> <li>• Possible damage or disconnected evaporator temperature sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Check connections</li> <li>• Confirm the (blue) AI2 connector is properly seated</li> <li>• Replace sensor</li> </ul>
<b>3</b>	Condenser (seawater) temperature sensor error (located on condenser coil)	<ul style="list-style-type: none"> <li>• Possible damage or disconnected condenser temp sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Confirm condenser temp sensor in place, replace if necessary</li> <li>• Confirm (black) AI3 connector is properly seated</li> </ul>
<b>4</b>	Evaporator High Temperature Alarm ( <b>in heat mode only</b> )	<ul style="list-style-type: none"> <li>• Air not circulating through unit</li> <li>• Clogged return grille</li> <li>• Fan isn't working</li> </ul>	<ul style="list-style-type: none"> <li>• Clean return grille and filter</li> <li>• Check for air restriction in ducting</li> <li>• Confirm fan is working</li> </ul>
<b>5</b>	Possible Refrigerant Leak	<ul style="list-style-type: none"> <li>• Evaporator sensor out of position</li> <li>• Refrigerant leak</li> <li>• Condenser temp too high</li> <li>• 12v models: error could be caused by voltage outside of operating range- 11.5v - 14.2v</li> </ul>	<ul style="list-style-type: none"> <li>• Evaporator sensor should placed inside copper tube midway up evaporator</li> <li>• Additionally for 12v models: turn off main breaker for 5 minutes (hard reset). Check voltage parameters, try again.</li> <li>• Verify condenser (cooling water) temp is below 110* F or within 20* F of seawater temperature</li> <li>• Verify voltage</li> </ul>

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6	Error 6 on 12v models only	<ul style="list-style-type: none"> <li>Typically caused by voltage or water flow</li> <li>1 Current overload protection (2 short 2 long)</li> <li>2 Undervoltage protection (3 short 2 long)-10 V</li> <li>3 Volt Overload protection (4 short 2 long) 14.3V</li> <li>4 Startup failure (5 short 2 long)</li> <li>5 Compressor low speed protection (2 short 3 long)</li> <li>6 Overload protection (3 short 3 long)</li> <li>7 Internal temperature protection (4 short 3 long)</li> <li>8 External temperature protection (5 short 3 long)</li> </ul>	<ul style="list-style-type: none"> <li>Verify Voltage (low voltage fault below 10V, high voltage at 14.3V)</li> <li>Restart unit through circuit breaker</li> <li>To confirm flashing sequence: Turn on unit</li> <li>Look for flashing light on electrical box near cable inputs</li> <li>The sequence will flash for one minute, after the fault occurs then return to stand by mode of one short, one long.</li> <li>Contact Mabru support and report sequence</li> </ul>

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6	Error 6 on VFD and VI units (Driver error = bottom board error)	<ul style="list-style-type: none"> <li>• Poor water flow</li> <li>• Electrical box location</li> <li>• Loose connections inside electrical box</li> </ul> <p>Check fault based on the number of flashes</p> <ul style="list-style-type: none"> <li>1 IPM Protection</li> <li>2 Phase current overcurrent protection</li> <li>3 Compressor running stalls or fails to start (drive failure)</li> <li>4 Phase current sampling fault</li> <li>5 Module over power protection</li> <li>6 Communication failure with host computer</li> <li>7 Undervoltage protection shutdown</li> <li>8 Voltage overload protection shutdown</li> <li>9 Current protection shutdown</li> <li>10 Input voltage phase failure (reserved, applicable to three-phase module)</li> <li>11 Abnormal shutdown of voltage sampling (VDC normal, VAC none)</li> <li>12 Overvoltage and undervoltage protection</li> <li>13 Radiator overheat protection shutdown</li> <li>14 Radiator sensor failure</li> <li>15 IPM overheat protection shutdown</li> <li>16 EE fault</li> </ul>	<ul style="list-style-type: none"> <li>• Restart unit through circuit breaker - Leave off for 5 minutes</li> <li>• Confirm proper water flow (clean strainer, bleed air from pump)</li> <li>• Open electrical box, confirm proper connections, confirm flashing sequence and contact Mabru support</li> </ul>
7	VFD and VI units	<ul style="list-style-type: none"> <li>• Check the 3 pin blue plug connection to terminal (refrigerant sensor)</li> </ul>	<ul style="list-style-type: none"> <li>• Reseat the blue 3 pin connector on top board</li> </ul>

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8	High Pressure Protection	<ul style="list-style-type: none"> <li>• <b>In cool mode only:</b> Seawater restriction Seawater pump is broken or air locked</li> <li>• <b>In heat mode only:</b> Air restriction in duct Clogged or blocked return grille Fan not working</li> </ul>	<ul style="list-style-type: none"> <li>• Clean seawater strainer</li> <li>• Bleed seawater pump</li> <li>• Possible descale</li> <li>• Repair restriction in ducting</li> <li>• Clean return grille</li> <li>• Confirm fan working - If the fault appears before the compressor starts, it can be a damaged high pressure switch or a loose connection</li> </ul>
9	Evaporator protection	<ul style="list-style-type: none"> <li>• <b>In cool mode only:</b> Poor air circulation Clogged return grille</li> <li>• <b>In heat mode only:</b> Air restriction in duct Clogged or blocked return grille Fan not working</li> </ul>	<ul style="list-style-type: none"> <li>• Repair restriction in duct</li> <li>• Clean return grille</li> <li>• Change direction of supply grille if air gets colder - Temperature set too low and the evaporator is icing up. Increase set temperature.</li> </ul>
10	Condenser Temperature Error	<ul style="list-style-type: none"> <li>• Seawater restriction - Seawater temperature is too high in cool mode or too low in heat mode. The low limit for condenser temp in heat is 24* F. Low condenser temperature limit in cool is 59* F.</li> <li>• Operation mode is wrong - cooling mode in a cold climate or heat mode in a warm climate</li> </ul>	<ul style="list-style-type: none"> <li>• Check flow at seawater thru-hull</li> <li>• Bleed seawater pump</li> <li>• Backflush or descale the system.</li> <li>• Check if selected mode is correct</li> </ul>
	<b>On standard AC models:</b> Pressure switch connection is incorrect	<ul style="list-style-type: none"> <li>• DL3 jumper is damaged or missing</li> </ul>	<ul style="list-style-type: none"> <li>• While unit is off, check connectors are in correct location</li> </ul>

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11	<b>VFD / VI models</b>	<ul style="list-style-type: none"> <li>• Confirm correct location of return temperature sensor. Sensor should be located on the (white) terminal AI1</li> <li>• Possible refrigerant leak</li> </ul>	<ul style="list-style-type: none"> <li>• Confirm sensor location</li> <li>• If leak, do not use unit. Contact dealer or Mabru support</li> </ul>
12	<b>Standard AC models:</b> Compressor overcurrent error	<ul style="list-style-type: none"> <li>• Bad capacitor or loose connection</li> </ul>	<ul style="list-style-type: none"> <li>• Check capacitor for signs of leaks or swelling. Replace if needed</li> </ul>
	<b>DC models:</b> Low voltage protection - shown as 'return gas sensor fault'	<ul style="list-style-type: none"> <li>• Voltage below 10.5 volts to unit</li> <li>• Possible loose connection</li> <li>• Low battery voltage</li> </ul>	<ul style="list-style-type: none"> <li>• Confirm proper connections</li> <li>• Adjust voltage supply to unit</li> <li>• Charge battery bank</li> </ul>
14	<b>VFD/VI models</b>	<ul style="list-style-type: none"> <li>• Voltage instability</li> <li>• Can also be caused by an issue with the lower board if intermittent. Board replacement may be required.</li> </ul>	<ul style="list-style-type: none"> <li>• Turn off breaker for 30 minutes (hard reset)</li> <li>• Check voltage before restarting display</li> </ul>
15	Communication error between circuit board and display panel	<ul style="list-style-type: none"> <li>• Can be caused by damaged control, RJ45 Display cable (cat5), or circuit board.</li> <li>• Possible water intrusion</li> </ul>	<ul style="list-style-type: none"> <li>• Check if the display control panel, RJ45 cable, and/or circuit board was affected by moisture</li> </ul>

**NOTE:** If the display reads **-4** or **-40** for any temperature readings, it could be an issue with the display cable or the sensor itself. Verify that the display cable is seated properly on the display and circuit board; if that does not resolve the issue, try a new CAT5 (ethernet) cable.