

# Stbd Side Monitoring



**COLDENERGY**  
AUTOMATION

Stbd Main Engine	Stbd ZP Unit
<ul style="list-style-type: none"> <li>Lube Oil Press. Fail/Shutdown</li> <li>Lube Oil High Temperature</li> </ul>	<ul style="list-style-type: none"> <li>Control Power Fail</li> <li>Seal Oil Tank Low Level</li> <li>Hydraulic System Low Pressure</li> <li>Hydraulic Oil Low Level</li> <li>Thruster Oil Pressure Low</li> </ul>
<ul style="list-style-type: none"> <li>Lube Oil Filter Diff. High</li> <li>Lube Oil Press. Fail/Shutdown</li> <li>Lube Oil Low Pressure</li> <li>Jacket Water Hi Temp./ Shutdown</li> </ul>	



## Information

PLC Output Status	PLC Analogue Input Alarm Values	Communications																																
<ul style="list-style-type: none"> <li>Engine Room Alarm Sounder</li> <li>Eng General Alarm Sounder</li> <li>Port Propulsion Light</li> <li>Stbd Propulsion Light</li> <li>Non Critical Light</li> <li>Critical Light</li> <li>Fire Alarm Light</li> <li>Stgr. Alar. Light</li> <li>Stbd Overboard Light</li> <li>Stbd Overboard Light</li> <li>Stbd Overboard Light</li> </ul>	<table border="1"> <tr><td>DA Jacket Water High Temperature</td><td>92 Deg C</td></tr> <tr><td>DA Lube Oil High Temperature</td><td>813 Deg C</td></tr> <tr><td>Stbd ZP Hydraulic Oil High Temperature</td><td>90 Deg C</td></tr> <tr><td>Stbd ME Lube Oil High Temperature</td><td>813 Deg C</td></tr> <tr><td>Stbd ME Jacket Water High Temperature</td><td>92 Deg C</td></tr> <tr><td>Stbd ME Exhaust After T/C High Temperature</td><td>900 Deg C</td></tr> <tr><td>Stbd ME Exh. Before T/C High Temperature (Stbd Bank)</td><td>780 Deg C</td></tr> <tr><td>Stbd ME Exh. Before T/C High Temperature (Port Bank)</td><td>780 Deg C</td></tr> <tr><td>Port ZP Hydraulic Oil High Temperature</td><td>90 Deg C</td></tr> <tr><td>Port ME Lube Oil High Temperature</td><td>813 Deg C</td></tr> <tr><td>Port ME Jacket Water High Temperature</td><td>92 Deg C</td></tr> <tr><td>Port ME Exh. After T/C High Temperature</td><td>900 Deg C</td></tr> <tr><td>Port ME Exh. Before T/C High Temperature (Stbd Bank)</td><td>780 Deg C</td></tr> <tr><td>Port ME Exh. Before T/C High Temperature (Port Bank)</td><td>780 Deg C</td></tr> <tr><td>Starboard ME Jacket Water Pressure Low</td><td>38 MPa</td></tr> <tr><td>Port ME Jacket Water Pressure Low</td><td>38 MPa</td></tr> </table>	DA Jacket Water High Temperature	92 Deg C	DA Lube Oil High Temperature	813 Deg C	Stbd ZP Hydraulic Oil High Temperature	90 Deg C	Stbd ME Lube Oil High Temperature	813 Deg C	Stbd ME Jacket Water High Temperature	92 Deg C	Stbd ME Exhaust After T/C High Temperature	900 Deg C	Stbd ME Exh. Before T/C High Temperature (Stbd Bank)	780 Deg C	Stbd ME Exh. Before T/C High Temperature (Port Bank)	780 Deg C	Port ZP Hydraulic Oil High Temperature	90 Deg C	Port ME Lube Oil High Temperature	813 Deg C	Port ME Jacket Water High Temperature	92 Deg C	Port ME Exh. After T/C High Temperature	900 Deg C	Port ME Exh. Before T/C High Temperature (Stbd Bank)	780 Deg C	Port ME Exh. Before T/C High Temperature (Port Bank)	780 Deg C	Starboard ME Jacket Water Pressure Low	38 MPa	Port ME Jacket Water Pressure Low	38 MPa	<p>Send Status 00</p> <p>Send Completed 1</p> <p>Stbd Status 0</p> <p>Stbd Completed 1</p> <p><b>Alarm Flow Page</b></p> <p>The Alarm window on the Home page shows all current general alarms.</p> <p>Current</p> <p>As acknowledged alarms are shown in full text with a white background, normal acknowledged alarms are shown in Green text.</p> <p>If an alarm screen and alarm bell are in acknowledged it will be shown in Green text. Alarms will not be removed from the window until the alarm has been acknowledged and cleared from the touch condition in the GUI.</p>
DA Jacket Water High Temperature	92 Deg C																																	
DA Lube Oil High Temperature	813 Deg C																																	
Stbd ZP Hydraulic Oil High Temperature	90 Deg C																																	
Stbd ME Lube Oil High Temperature	813 Deg C																																	
Stbd ME Jacket Water High Temperature	92 Deg C																																	
Stbd ME Exhaust After T/C High Temperature	900 Deg C																																	
Stbd ME Exh. Before T/C High Temperature (Stbd Bank)	780 Deg C																																	
Stbd ME Exh. Before T/C High Temperature (Port Bank)	780 Deg C																																	
Port ZP Hydraulic Oil High Temperature	90 Deg C																																	
Port ME Lube Oil High Temperature	813 Deg C																																	
Port ME Jacket Water High Temperature	92 Deg C																																	
Port ME Exh. After T/C High Temperature	900 Deg C																																	
Port ME Exh. Before T/C High Temperature (Stbd Bank)	780 Deg C																																	
Port ME Exh. Before T/C High Temperature (Port Bank)	780 Deg C																																	
Starboard ME Jacket Water Pressure Low	38 MPa																																	
Port ME Jacket Water Pressure Low	38 MPa																																	



## Portland Tugs: Engine Monitoring System

# PROJECT PROFILE

### Automation Services

The roles of Cold Energy Automation during this project were;

- Control System Design, Micrologix Programming and Remote Commissioning.
- Create & Commission SCADA Graphical Supervisor.

### Project Equipment

- Allen Bradley Automation System (Micrologix 1100)
- Indusoft SCADA system
- Panel Mount Industrial Touch Screen PC's.

### Control System Communication Protocols

- Ethernet/IP

### Project Overview

The Portland Tugs, Cape Nelson and Cape Grant, required an engine alarming and visualisation system. The system was designed around the Programmable Logic Controllers (PLC) selected for the project, Allen Bradley Micrologix 1100. Each vessel had a PLC retro fitted on site by Pasma Electrical combined with an industrial touch screen PC. A second fully redundant SCADA touch screen PC was added to the wheel house as stage 2 of the project.

The Allen Bradley Micrologix PLC's controlled the;

- Digital control points.
- Analogue control points.
- All alarm setpoints, time delays, alarming groupings and logic control.

The Indusoft SCADA system visualised the status of the digital and analogue values, provided a storage database for alarm events and analogue logging. All alarming, logging, set points and system status were displayed and adjusted via the Indusoft SCADA system from the engine room and wheel house.