Troubleshooting the Digital Generator

The digital control system is designed to monitor and identify all the operations of the generator including verifying engine temperatures, ac output, dc output, and generator loads. The output power bar will further indicate what percentage of the generator is currently in use. Engine hours are also calculated at the top of this page. The control panel is user friendly and it allows for complete access to all functions of the generator including all shut down messages stored in the VCS. Each time the generator shuts down it will record a message, if you know and or see the shut down message please refer to the guide provided to understand where the problem is coming from. The guide provided will also instruct you how to gain access to these shut down messages. Below please find some of the more common shut down messages and their most likely causes.

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NO CRANK:

Does the generator crank?

If no check battery voltage, if battery voltage is good it will be displayed on control panel and panel will stay illuminated. If message “start attempt failed” then most likely you have either a bad K1 relay or a bad or loose connection on the white wire on the starter motor.

CRANK; NO START:

The generator cranks but will not start and the following messages appear on the control panel: UNEXPECTED STOP: This message will identify a fuel problem; the problem may reside in the fuel tank, filter, pump, or possibly the k3 relay. AC VOLTAGE IS LOW, EXCITATION FAILURE: This message indicates that there is a potential no output issue. At this point you will need to refer to the attached addendum to troubleshoot a no output situation. This could also indicate that the generator is not advancing in speed to generate the proper output; this situation could be indicated by the VCS actuator as it may not move in one direction or the other.

GENERATOR RUNS AT FULL SPEED:

This would indicate that the VCS actuator is either locked up against the high speed jam nuts or the actuator will not pull back down. If the actuator is locked up on the high speed jam nuts you must first unlock and then reset the high speed adjustment on the fuel injection pump so that it cannot lock in this manner again as this will result in permanent damage to the VCS board. If the actuator still does not respond in one direction then you must identify if the actuator motor is damaged or the VCS board is damaged. To test this disconnect the amp plug for the VCS actuator and manually ramp the throttle up to approximately ¾ speed. Restart the generator while monitoring the dc voltage at the motor. There should always be dc voltage either higher or lower until you are within the target ac voltage range and at that point there will be no dc measurement. If this is the case then your actuator motor is damaged. If you do not see dc voltage in one direction or the other then the VCS board is damaged and will require repair/replacemet.

EXHAUST MANIFOLD TEMP IS HIGH:

The generator will display a message, EX MAN TEMP IS HIGH: This message will occur for the following reasons.

1. Reduced salt water flow due to clogged intake
2. Reduced salt water flow due to clogged sea strainer
3. Reduced salt water flow due to failed impellor
4. Reduced salt water flow due to obstruction in heat exchanger
5. Failed exhaust hose in capsule
6. Damaged temperature sensor on exhaust elbow due to salt water contamination

OVERHEATING:

When the generator overheats due to a fresh water message like HEAD TEMP IS HIGH or FW TEMP IN IS HIGH or FW OUT TEMP IS HIGH, would most likely be caused by a leak in the fresh water system, a broken fan belt, a faulty sensor, engine overload or a possible bad thermostat. This can also be indicated if there is poor raw water flow that did not yet trigger the exhaust shut off sensor.

WINDING TEMPERATURE:

If you receive a WINDING TEMP IS HIGH message then the windings are overheating and this is usually caused by a faulty boost relay or the generator is out of calibration (AC). To verify this you will need to monitor the voltage and frequency at the phoenix connectors to see if they are reasonably close to the panel readings. If they are not, please contact Fischer Panda for further direction. With a locked in boost your voltage will appear to be nominal but your frequency will appear to be low. Conversely to this if your voltage is nominal and your frequency is high then you have a bad capacitor.

BEARING TEMPERATURE:

If you see a message BEARING TEMP IS HIGH it would indicate that either you have lost the oil in the backend (if equipped with oil cooled bearing) or the bearing has failed. There is no active sensor monitored on non- oil cooled back ends. This system will be protected by a ground safety switch much like the standard product.