



## Side-Power 6123..X Control Box



### Operational voltage:

- 5 - 32V

### Electric protection:

- Over voltage and reverse polarity protection.
- “Stay active” power backup during short 0-volt state at electric motor start-up.
- Electronic, auto-reset fuse on feed to control panel circuits.

### Switching:

- Solid state switching (no relays).

### Sensing functions:

- Solenoid contactors actual position.
- Direction signals from controls.
- Thermal sensor in electric motor

### Control panels:

- Any 4-wire or 5-wire controls made after 1998.

### To upgrade older Sidepower thrusters to IPC system:

- Use new SM6123..X IPC controller with unique wiring harness.

## Logic Functions

- If the overheat sensor trips, no use of the thruster will be allowed. Even in a locked solenoid situation, the IPC controller’s unique “auto-stop” will halt thruster operation.
  - If the solenoid’s actual position and input control signal do not match (solenoid lock-in), the “auto-stop” function activates:
    - Both solenoid contactors will be engaged at the same time, thus breaking the motor circuit.
    - The “auto-stop” status will continue until the main power is shut off or the problem is solved.
    - The “auto-stop” function will release the solenoid contactors for 0.5 seconds every 10 seconds to determine if the locked-in contactor has released.
    - If the contactor does remain locked-in the thruster will run for 0.5 seconds every 10 seconds to alert the operator to the problem without having an appreciable effect on the boat.
  - If the IPC senses solenoid ringing/flapping, it will interrupt the run signal for 4 seconds.
    - If the user continues to try to run the thruster, he/she will become aware of the problem when the thruster stops running, then runs for 0.5 seconds every 4 seconds.
    - This sequence will be repeated three times after which the user will be locked out of all functions for 30 seconds to enable the batteries to recover.
    - Low voltage is the most common reason for solenoid ringing.
- ### Function change:
- In the case of an overheat situation, the control panel will not be shut down (the light will stay ON). This is to accommodate an optional Auto Mainswitch to maintain operation through the control (ON/OFF function) while also still providing operator with feedback of the IPC function.