



**SubDrive2W, 75, 100, 150, 300, MonoDrive, & MonoDrive XT**

The Franklin Electric SubDrive/MonoDrive Constant Pressure controller is a variable-speed drive that delivers water at a constant pressure.

**WARNING:** Serious or fatal electrical shock may result from failure to connect the motor, SubDrive/MonoDrive Controller, metal plumbing and all other metal near the motor or cable to the power supply ground terminal using wire no smaller than motor cable wires. To reduce the risk of electrical shock, disconnect power before working on or around the water system. Capacitors inside the SubDrive/MonoDrive Controller can still hold a lethal voltage even after power has been removed. Allow 10 minutes for dangerous internal voltage to discharge. Do not use motor in swimming areas.



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**SubDrive/MonoDrive Troubleshooting**

Should an application or system problem occur, built-in diagnostics will protect the system. The “FAULT” light or digital display on the front of the SubDrive/MonoDrive Controller will flash a given number of times or display a number indicating the nature of the fault. In some cases, the system will shut itself off until corrective action is taken. Fault codes and their corrective actions are listed below. See SubDrive/MonoDrive Installation Manual for installation data.

| NUMBER OF FLASHES OR DIGITAL DISPLAY       | FAULT   | POSSIBLE CAUSE  | CORRECTIVE ACTION   |
|--|---|---|---|
| <b>1</b>                                   | MOTOR UNDERLOAD                                       | <ul style="list-style-type: none"> <li>- Overpumped well</li> <li>- Broken shaft or coupling</li> <li>- Blocked screen, worn pump</li> <li>- Air/gas locked pump</li> <li>- SubDrive not set properly for pump end</li> </ul> | <ul style="list-style-type: none"> <li>- Frequency near maximum with less than 65% of expected load, 42% if DIP #3 is “on”</li> <li>- System is drawing down to pump inlet (out of water)</li> <li>- High static, light loading pump - reset DIP switch #3 to “on” for less sensitivity if not out of water</li> <li>- Check pump rotation (SubDrive only) reconnect if necessary for proper rotation</li> <li>- Air/gas locked pump - if possible, set deeper in well to reduce</li> <li>- Verify DIP switches are set properly</li> </ul> |
| <b>2</b>                                   | UNDERVOLTAGE  | <ul style="list-style-type: none"> <li>- Low line voltage</li> <li>- Misconnected input leads</li> </ul>  | <ul style="list-style-type: none"> <li>- Line voltage low, less than approximately 150 VAC (normal operating range = 190 to 260 VAC)</li> <li>- Check incoming power connections and correct or tighten if necessary</li> <li>- Correct incoming voltage - check circuit breaker or fuses, contact power company</li> </ul>   |
| <b>3</b>                                   | LOCKED PUMP   | <ul style="list-style-type: none"> <li>- Motor and/or pump misalignment</li> <li>- Dragging motor and/or pump</li> <li>- Abrasives in pump</li> </ul>   | <ul style="list-style-type: none"> <li>- Amperage above SFL at 10 Hz</li> <li>- Remove and repair or replace as required</li> </ul>   |
| <b>4</b><br>(MonoDrive & MonoDriveXT only) | INCORRECTLY WIRED                                     | <ul style="list-style-type: none"> <li>- MonoDrive only</li> <li>- Wrong resistance values on main and start</li> </ul>   | <ul style="list-style-type: none"> <li>- Wrong resistance on DC test at start</li> <li>- Check wiring, check motor size and DIP switch setting, adjust or repair as needed</li> </ul>   |
| <b>5</b>                                   | OPEN CIRCUIT  | <ul style="list-style-type: none"> <li>- Loose connection</li> <li>- Defective motor or drop cable</li> <li>- Wrong motor</li> </ul>  | <ul style="list-style-type: none"> <li>- Open reading on DC test at start.</li> <li>- Check drop cable and motor resistance, tighten output connections, repair or replace as necessary, use “dry” motor to check drive functions, if drive will not run and exhibits underload fault replace drive</li> </ul>  |
| <b>6</b>                                   | SHORT CIRCUIT   | <ul style="list-style-type: none"> <li>- When fault is indicated immediately after power-up, short circuit due to loose connection, defective cable, splice or motor</li> </ul>   | <ul style="list-style-type: none"> <li>- Amperage exceeded 50 amps on DC test at start or max amps during running</li> <li>- Incorrect output wiring, phase to phase short, phase to ground short in wiring or motor</li> <li>- If fault is present after resetting and removing motor leads, replace drive</li> </ul>  |
|  | OVER CURRENT  | <ul style="list-style-type: none"> <li>- When fault is indicated while motor is running, over current due to loose debris trapped in pump</li> </ul>  | <ul style="list-style-type: none"> <li>- Check pump</li> </ul>  |
| <b>7</b>                                   | OVERHEATED DRIVE                                      | <ul style="list-style-type: none"> <li>- High ambient temperature</li> <li>- Direct sunlight</li> <li>- Obstruction of airflow</li> </ul>   | <ul style="list-style-type: none"> <li>- Drive heat sink has exceeded max rated temperature, needs to drop below 85 °C to restart</li> <li>- Fan blocked or inoperable, ambient above 125 °F, direct sunlight, air flow blocked</li> <li>- Replace fan or relocate drive as necessary</li> </ul>  |
| <b>8</b><br>(SubDrive300 only)             | OVER PRESSURE   | <ul style="list-style-type: none"> <li>- Improper pre-charge</li> <li>- Valve closing too fast</li> <li>- Pressure setting too close to relief valve rating</li> </ul>  | <ul style="list-style-type: none"> <li>- Reset the pre-charge pressure to 70% of sensor setting. Reduce pressure setting well below relief valve rating. Use next size larger pressure tank.</li> <li>- Verify valve operation is within manufacturer’s specifications.</li> <li>- Reduce system pressure setting to a value less than pressure relief rating.</li> </ul>   |
| <b>RAPID</b>                               | INTERNAL FAULT  | <ul style="list-style-type: none"> <li>- A fault was found internal to drive</li> </ul>   | <ul style="list-style-type: none"> <li>- Unit may require replacement. Contact your supplier.</li> </ul>  |
| <b>9</b><br>(SubDrive2W only)              | OVER RANGE<br>(Values outside normal operating range) | <ul style="list-style-type: none"> <li>- Wrong hp/voltage</li> <li>- Internal fault</li> </ul>  | <ul style="list-style-type: none"> <li>- Verify motor hp and voltage</li> <li>- Unit may require replacement. Contact your supplier.</li> </ul>   |