Condition	Possible Causes	Suggested Solution
Wrong Sensor	Incorrect sensor installed	Connect correct sensor
	Sensor Type set incorrectly in 9900	Set correct sensor TYPE in INPUT menu (see page 25)
Wrong Code	Wrong password entered	Enter correct password (see page 26)
K-Factor Out Of Range	K-Factors cannot be set to 0	Enter K-Factor from 0.0001 to 99999
Backlight inoperative	9900 operating on loop power	Connect 9900 to 10.8 to 35.2 VDC power.
	Backlight turned OFF (**NOTE:** Backlight can turn off automatically in AUTO mode)	Set BACKLIGHT to LOW, HIGH or AUTO in OPTION menu.
Relays 2 and 3 inoperative	9900 operating on loop power	Connect 9900 to 10.8 to 35.2 VDC power.
	Relay Module installed incorrectly	Remove and reseat relay module
	Wrong settings in RELAY menu	Use test relay to verify relay operation then check relay settings.
Relay LEDs inoperative	9900 operating in Loop Power	Use DC power. Check relay states in VIEW mode for status.
Open Collector (R1) or Relay (R2 or R3) always on	Hysteresis value too large	Change the hysteresis value
	Defective Relay Module	Replace Relay Module
OVR relay state (Pulse Overrun)	Relay pulse rate exceeds maximum of 300 pulses per minute.	Increase volume pulse setting
		Reduce system flow rate
	Pulse width set too wide	Decrease pulse width
	(**NOTE:** Max pulse rate = 300; max pulse width = 100 mS.	
– – – – –	Flow rate exceeds display capability	Increase Flow units time base
		Change unit of measure

Troubleshooting

Condition	Possible Causes	Suggested Solution
Check Sensor (pH/ORP only)	9900 cannot "talk" to sensor	• Check wiring • Install or replace sensor
	Missing sensor or bad temperature element.	
No Sensor (Flow, Cond/Res, Press, Level, Temp, 4-20 mA, Sal, Batch, DO)	9900 cannot "talk" to sensor	• Check wiring • Install or replace sensor
Check Preamp	9900 cannot "talk" to the preamp	Check wiring or replace preamp
Warning LED lit	Look for error message	Correct error condition
Missing Cap	Dissolved Oxygen sensor is missing the sensor cap.	Reinstall Dissolved Oxygen sensor cap
Replace Cap	Dissolved Oxygen sensor cap has expired.	Install new Dissolved Oxygen sensor cap
Broken Glass (2751 Only)	pH sensor glass has been damaged, causing very low impedance.	Visually inspect pH sensor for cracked and/or chipped glass. After inspection or replacement of pH Sensor wait 30 seconds and then manually start a glass impedance measurement, page 33. This will clear the Broken Glass alarm.
Hi Impedance (2751 Only)	The measured pH sensor impedance is above the high impedance level.	Visually inspect the pH electrode and clean if necessary.
	Electrode could be in air.	Ensure electrode is submersed at all times.
Check Cal (2751 pH/ORP only)	Slope and/or Offset are out of range (possibly due to memory failure in sensor or preamp)	Perform pH EasyCal (pg. 34 & 56)
		Perform ORP EasyCal (pg. 36 & 58)
		Set pH Slope or Standard (pg. 34 & 57)
		Set ORP Slope or Standard (pg. 36 & 59)
		Reset pH CAL (pg. 34)
		Reset ORP CAL (pg. 36)
Sensor Data Screen missing (2751 Only)	pH/ORP Sensor installed does not have a memory chip. or communication error	Older GF Signet electrodes, such as the 2754, or electrodes with BNC type connectors do not have memory chips. When the 9900 detects a non-memory chip electrode, the Sensor Data display will not be shown. If a memory chip enabled sensor is installed, a communication error between the memory chip and 2751, or 2751 and 9900, may have occurred. To clear the error and restore the Data Screen, you may do one of the following: • Disconnect the (S^3L) connection between the 9900 and the 2751, wait 5 seconds, reconnect the (S^3L) connection between the 9900 and the 2751. • Cycle power to the 9900.

Calibration Error Messages

Message	Cause	Solution
Out Of Range Use Manual Calibration	(Cond/Res) Error > 10% in AutoCal	Use manual calibration method
	(pH) Buffer not found; Error > ±1.5 pH units	Use 4, 7, 10 pH buffers (with quinhydrone for ORP calibration) Clean sensor and retry EasyCal Use manual calibration method
	(ORP) No quinhydrone in buffer Error greater than ±80 mV	
Err Too Large To Calibrate	(Cond/Res) Manual cal when error > 100%	Inspect sensor and wiring for damage Clean sensor
	(pH) Offset > 1.3 pH units; Slope error > 100%	Check reference Clean sensor Replace sensor
	(Press) Slope must be < ±50% or offset must be < 2.75 PSI or equivalent.	
	(Sal) Slope error > 1000%	
Error Volume Too Low	User-entered volume too small to calibrate	Correct volume entry Use longer calibration period
Error New KF Out Of Range	The calculated K-Factor too low or high	Verify volume or rate entered Verify flow is present
Error Flow Rate Too Low	(Rate Cal) Flow too low to accurately calibrate	Increase flow
Cal Error Out Of Range	(4 to 20 mA) Slope error > 1000%	Check input at 4 mA and 20 mA settings
	(Temp) Offset must be < ±20 °C or equivalent.	Check sensor range Check reference Replace sensor
Slope Too Close To Standard	(4 to 20 mA) Difference in calibration values must be > 0.1 units	Check sensor Use fresh buffer Use two different buffer values Clean sensor
	(pH) Difference in calibration values must be > 2 pH units	
	(ORP) Difference in calibration values must be > 30 mV	
Standard Too Close To Slope	(4 to 20 mA) Difference in calibration values must be > 0.1 units	Clean sensor Use fresh 4, 7, 10 pH buffers Use two different buffer values
	(pH) Difference in calibration values must be > 2 pH units	
	(ORP) Difference in calibration values must be > 30 mV	
Level Offset Too Large	Offset must be < 1.0 meter	Decrease offset Replace sensor
Pressure Too High	Pressure must be lower than 2.5 PSI or equivalent to do zero cal.	Decrease pressure
Pressure Too Close To Zero	Pressure must be higher than 3 PSI or equivalent to do slope calibration.	Increase pressure Check reference
Check Cal (2751 pH/ORP only)	Slope and/or Offset are out of range (possibly due to memory failure in sensor or preamp)	Perform pH EasyCal (pg. 34 & 56)
		Perform ORP EasyCal (pg. 36 & 58)
		Set pH Slope or Standard (pg. 34 & 57)
		Set ORP Slope or Standard (pg. 36 & 59)
		Reset pH CAL (pg. 34)
		Reset ORP CAL (pg. 36)