

Rapidlogger Systems

Tech Note #103 - Understanding Frequency Input Channels and Pump Rate Variable Mapping

This tech note describes how the physical frequency input terminals on the Rapidlogger system (commonly labeled F1, F2, F3, F4, etc.) relate to the Pump Rate and Pump Total variables (for example Pump1Rate, Pump2Rate) configured through the Rapidlogger Utility program. It is intended to help resolve cases where a pump reads correctly on one frequency input but shows no reading when wired to a different one.

Why This Happens

Each Pump Rate and Pump Total variable in the Rapidlogger Utility program is tied to a specific physical frequency input, not to any open terminal. If a mag pickup or flow sensor is wired to a frequency input that is not the one assigned to the variable being read -- for example, wiring a second pump's sensor to one input when that variable is still mapped to another -- the corresponding Pump Rate or Pump Total variable will show no reading even though the sensor itself is working correctly.

The assignment between physical inputs and variables varies by board generation and by which default variable list is loaded, so rather than working from a fixed table, check the unit in front of you.

How To Verify The Mapping

1. Open the Rapidlogger Utility program and Ping/Read All from the unit (see Tech Note 17).
2. Locate the Pump Rate or Pump Total variable in question (for example Pump2Rate) and check its assigned Input field. This shows which physical frequency channel that variable is reading from.
3. Compare this against the physical wiring for the unit to confirm the sensor is landed on the same terminal the variable is configured to read.
4. If they do not match, either re-wire the sensor to the correct terminal, or change the Input assignment for that variable in the Utility program to match where the sensor is actually wired, then write the change to the unit and power cycle.
5. Use the front panel diagnostic screen on the unit's LCD to confirm a raw pulse count is present on the physical input before assuming the sensor itself is at fault. The frequency and quadrature raw counts are readable directly from the display, in the same way as the depth diagnostic screen described in Tech Note 70. If

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the raw count moves when the pump turns, the sensor and the wiring to that terminal are good and the problem is the variable's Input assignment.