

Since ISTA versions vary slightly in their UI, I want to clarify the exact terminology so you don't get stuck searching for a button that isn't there.

In the most common versions of **ISTA/D (Rheingold)**, the path is slightly more "nested." Here is the specific refinement of that plan:

1. Refined Navigation Path

- Go to **Vehicle Management** -> **Troubleshooting**.
- Select **Function Structure**.
- Navigate to: **Drive** -> **Engine electronics** -> **Fuel supply** -> **High-pressure fuel system**.
- Click **Display** (bottom right). This will bring up a list of "Technical Services" or "Test Plans."
- Instead of starting a Test Plan, look for the tab labeled **Diagnosis Query**.

2. Selecting the Data Points

Once in the **Diagnosis Query** tab, you will see a list of parameters. Check these specific boxes:

- **Rail pressure (setpoint) * Rail pressure (actual)**
- **Fuel high-pressure control valve (Duty Cycle or PWM)**
- **Voltage, Terminal 87**
- **Voltage, oxygen sensor downstream of catalytic converter** (Since you noted this was "all over the place," seeing it synced with the pressure drop is your "smoking gun.")

3. The Recording Mechanism

- Once you hit **State Query** or **Display**, ISTA will start showing numbers.
- Look for the button labeled **Graphical Display**. This opens the oscilloscope-style window.
- **The "Record" Trick:** Most versions of ISTA don't have a giant "Record Video" button. Instead, they have a **"Record" (Floppy Disk icon)** that captures the numerical data into a CSV or LOG file.
- Alternatively, many technicians use a **screen recording tool** (like Windows Key + Alt + R) to record the ISTA window while they drive. This allows you to see the graphs exactly as they happened in real-time.

Why this is the "Kill Shot" for your diagnosis:

If you are driving and the pressure drops to 350 psi, look at the **Terminal 87 voltage** and the **Downstream O2 voltage** on the graph.

- **Electrical Short Scenario:** If the O2 sensor voltage spikes to 12V (shorting to its heater) and simultaneously the Terminal 87 voltage dips, you have a harness short.
- **HPFP Mechanical Scenario:** If the voltages remain steady, but the **Actual Rail Pressure** drops while the **Control Valve PWM** increases to its maximum limit, the HPFP is physically "dying" and cannot keep up with the DME's request.

One final pro-tip: When you go for the drive, make sure the laptop is plugged into a **power**

inverter in the cigarette lighter or has a full charge. If the laptop dies while ISTA is "talking" to the DME at high speeds, it can sometimes leave the DME in a "comm-error" state until you cycle the battery.

Do you have a passenger who can hold the laptop, or are you planning to record the screen for review afterward?