Dakota Digital SEN-1011

Dakota Digital Cable Drive Sensor SEN-1011 User Manual

Model: SEN-1011 (Part Number: DS-250011)

1. Introduction

The Dakota Digital Cable Drive Sensor SEN-1011 is designed to convert a mechanical speedometer cable signal into an electronic pulse signal. This allows for the use of electronic speedometers, cruise control systems, or other electronic devices that require a vehicle speed input, while retaining the original mechanical speedometer cable. It is engineered for reliability and accuracy in various automotive applications.

Image 1.1: The Dakota Digital Cable Drive Sensor SEN-1011. This image shows the compact design of the sensor, which is typically installed in-line with a mechanical speedometer cable.

2. Safety Information

- Always disconnect the vehicle's battery before performing any electrical work to prevent short circuits and electrical shock.
- Ensure all wiring connections are secure and properly insulated to prevent damage from vibration, heat, or moisture.
- Route cables away from moving parts, sharp edges, and high-heat sources to prevent abrasion or melting.
- Consult a qualified automotive technician if you are unsure about any installation steps.
- Do not modify the sensor or its wiring, as this may void the warranty and cause malfunction.

3. Package Contents

Verify that all components are present before beginning installation:

- Dakota Digital Cable Drive Sensor (SEN-1011)
- Wiring Harness
- Mounting Hardware (if applicable)
- Instruction Manual (this document)

4. Installation

4.1. Mounting the Sensor

The SEN-1011 sensor is designed to be installed in-line with your existing mechanical speedometer cable. It typically connects to the transmission or transfer case output where the original speedometer cable attaches, and then the original cable connects to the sensor's output.

1. Locate the speedometer cable connection point on your vehicle's transmission or transfer case.
2. Disconnect the original speedometer cable from the transmission/transfer case.
3. Thread the SEN-1011 sensor onto the transmission/transfer case output. Ensure it is securely tightened.
4. Connect the original speedometer cable to the output side of the SEN-1011 sensor. Ensure this connection is also secure.
5. Secure the sensor and cable assembly to prevent excessive movement or strain using appropriate mounting hardware or cable ties.

Image 4.1: Illustrative image of the sensor mounted in-line with a speedometer cable. The sensor acts as an intermediary, converting mechanical rotation into an electronic signal.

4.2. Wiring Connections

The SEN-1011 sensor requires three basic electrical connections:

- **Red Wire:** Connect to a switched +12V power source. This source should be active when the ignition is on.

- **Black Wire:** Connect to a good chassis ground. Ensure a clean, secure connection.
- **White Wire:** This is the signal output wire. Connect this to the speed input of your electronic speedometer, cruise control module, or other device.

Ensure all connections are soldered or crimped with high-quality connectors and insulated with heat shrink tubing or electrical tape to protect against environmental elements.

Image 4.2: Illustrative wiring diagram for the SEN-1011. This diagram shows the typical connections for power, ground, and signal output. Refer to your vehicle's wiring diagram for specific power and ground locations.

5. Setup and Calibration

The SEN-1011 sensor provides a raw pulse signal. The calibration process will typically be performed by the electronic device (e.g., speedometer, cruise control unit) that receives the sensor's output. Refer to the instruction manual of your electronic device for specific calibration procedures.
Common calibration methods involve driving a known distance (e.g., 2 miles) and allowing the electronic device to learn the pulse count per mile, or entering a specific pulse-per-mile (PPM) value if known.

6. Operation

Once properly installed and calibrated, the SEN-1011 sensor operates automatically. As the mechanical speedometer cable rotates, the sensor generates an electronic pulse signal proportional to the vehicle's speed. This signal is then transmitted to the

connected electronic device, providing accurate speed data.

7. Maintenance

The Dakota Digital Cable Drive Sensor SEN-1011 is a sealed unit and requires minimal maintenance. Periodically inspect the wiring and connections for any signs of wear, corrosion, or damage. Ensure the sensor's mechanical connections to the transmission/transfer case and speedometer cable remain secure.

8. Troubleshooting

Problem	Possible Cause	Solution
No speed reading / Inaccurate speed	No power to sensor Poor ground connection Loose or incorrect signal wire connection Sensor not rotating (mechanical cable issue) Electronic device not calibrated	Check +12V power connection (Red wire). Verify Black wire has a solid ground. Inspect White signal wire connection to the electronic device. Ensure mechanical speedometer cable is properly connected and rotating. Perform calibration on the connected electronic device.
Intermittent speed reading	Loose wiring connections Damaged wiring insulation Interference from other electrical components	Check all wiring connections for tightness and corrosion. Inspect wiring for cuts or abrasions; repair as necessary. Route signal wire away from ignition wires or high-current cables.

9. Specifications

Model: SEN-1011

Part Number: DS-250011

Input: Mechanical Speedometer Cable

Output: Electronic Pulse Signal (typically 8,000 pulses per mile, consult connected device for compatibility)

Operating Voltage: 9-16V DC

Manufacturer: Dakota Digital

10. Warranty and Support

Dakota Digital products are backed by a limited warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official Dakota Digital website.
For technical assistance, troubleshooting, or replacement parts, please contact Dakota Digital customer support:
Website: www.dakotadigital.com

Phone: Refer to website for current contact numbers.