

PLPFUDVDZZ HS800-3

PLPFUDVDZZ HS800-3 3 Axis DRO Digital Readout and Linear Scale Encoder User Manual

Model: HS800-3

1. PRODUCT OVERVIEW

The PLPFUDVDZZ HS800-3 is a 3-axis Digital Readout (DRO) system designed for precision measurement applications, typically used with machine tools. This kit includes the HS800-3 DRO unit and three linear scale encoders with varying travel lengths (150mm, 350mm, 900mm) and a resolution of 0.001mm. It provides accurate and reliable position feedback for enhanced machining accuracy.

Key Features:

- **Comprehensive Accessory Package:** Simplifies installation and setup.
- **Versatility:** Suitable for a wide range of industrial and workshop applications.
- **Compact Design:** Allows for easy installation and integration into various machine setups.
- **Accurate Measurement:** Offers multiple measurement lengths and a high resolution of 0.001mm for precise readings.
- **Full-featured:** Equipped with fast programming capabilities for efficient operation.



Figure 1: PLPFUDVDZZ HS800-3 Digital Readout Unit and Linear Scales. This image shows the main DRO unit along with the three linear scales of different lengths included in the kit.

2. SETUP AND INSTALLATION

Proper installation of the HS800-3 DRO system is crucial for accurate performance. Follow these steps carefully.

2.1 Unpacking and Inspection

- Carefully unpack all components and verify against the packing list.
- Inspect all items for any signs of shipping damage. Contact your supplier immediately if any damage is found.
- Ensure all linear scales, the DRO unit, power cable, and mounting hardware are present.

2.2 Mounting the Linear Scales

Mount the linear scales securely to the machine axes (X, Y, Z) ensuring they are parallel to the direction of travel. Use the provided mounting brackets and hardware. Refer to the dimension drawing for proper spacing and hole alignment.



Figure 2: Linear Scale Mounting Diagram. This diagram illustrates the dimensions and mounting points for the linear scales, showing the total length (L+142), effective measurement length (L), and cross-section dimensions (21.5mm x 33.5mm).

- Ensure the scale body and reader head are aligned correctly to prevent binding or damage during machine movement.
- Maintain a small, consistent gap between the scale and the reader head as specified in the product documentation (typically 0.5mm to 1mm).
- Secure all mounting screws firmly.

2.3 Connecting the DRO Unit

Connect the linear scales to the HS800-3 DRO unit using the provided cables. The DRO unit has dedicated ports for each axis (X, Y, Z). Ensure the connectors are fully seated and secured.



Figure 3: DB-9 Connection Method for TTL Signals. This table details the pin assignments for the DB-9 connector used for TTL signal input from the linear scales to the DRO unit. It shows which pins correspond to 0V, Ground, +5V, and signal lines A, B, and R.

- Connect the power cable to the DRO unit and then to a suitable AC power outlet (AC80-250V, 50/60Hz).
- Do not power on the unit until all connections are complete and verified.

3. OPERATING INSTRUCTIONS

This section provides general guidance on operating the HS800-3 DRO unit. Refer to the specific DRO unit's detailed manual for advanced functions.

3.1 Power On/Off

- To power on, press the power button located on the front panel. The display will illuminate.
- To power off, press and hold the power button until the display shuts down.

3.2 Basic Measurement Functions

- **Zeroing an Axis:** Move the machine axis to the desired starting point. Press the "ZERO" button for the corresponding axis (X, Y, or Z) to set the current position to zero.
- **Absolute/Incremental Modes:** The DRO typically supports both absolute (ABS) and incremental (INC) measurement modes. Use the "ABS/INC" button to switch between modes. Absolute mode measures from a fixed datum, while incremental mode measures from the last zeroed point.
- **Unit Conversion:** Press the "MM/INCH" button to switch between millimeter and inch display units.
- **Half Function:** Use the "1/2" button to divide the displayed value by two, useful for finding center points.

3.3 Setting Datum Points

The DRO allows setting multiple datum points for complex machining operations. Consult the full DRO manual for detailed instructions on setting and recalling datum points.

4. MAINTENANCE

Regular maintenance ensures the longevity and accuracy of your HS800-3 DRO system.

- **Cleaning:** Keep the linear scales and DRO display clean. Use a soft, dry cloth to wipe away dust and debris. For stubborn grime on scales, a mild, non-abrasive cleaner can be used sparingly, applied to the cloth, not directly to the scale.

- **Inspection:** Periodically check all cables for wear or damage. Ensure all mounting screws for the scales and DRO unit are tight.
- **Environmental Conditions:** Operate the DRO system within its specified environmental conditions (temperature, humidity) to prevent damage and ensure optimal performance. Avoid exposure to excessive moisture, dust, or direct sunlight.
- **Calibration:** While the linear scales are highly accurate, periodic verification of accuracy using calibrated standards is recommended for critical applications.

5. TROUBLESHOOTING

This section addresses common issues you might encounter with your HS800-3 DRO system.

Problem	Possible Cause	Solution
DRO unit does not power on.	No power supply; faulty power cable; internal fault.	Check power cable connection and wall outlet. Ensure power button is pressed. If issue persists, contact support.
Axis display shows "E" or no reading.	Loose scale cable connection; damaged scale cable; faulty linear scale; reader head misalignment.	Check cable connections for the affected axis. Inspect cable for damage. Verify reader head alignment and gap.
Inaccurate readings.	Linear scale not securely mounted; debris on scale; reader head misalignment; machine backlash.	Ensure scales are rigidly mounted. Clean scales thoroughly. Re-check reader head alignment. Consider machine calibration for backlash compensation if available on DRO.
Display freezes or behaves erratically.	Electrical interference; internal software issue.	Power cycle the DRO unit. Ensure proper grounding of the machine and DRO. Avoid operating near strong electromagnetic fields.

6. SPECIFICATIONS

Technical specifications for the PLPFUDVDZZ HS800-3 DRO system.

- **Model Number:** HS800-3
- **Product Name:** 3 Axis DRO kit
- **Input Voltage:** AC80-250V 50/60HZ
- **Signal Type:** TTL
- **Power Consumption:** 25VA
- **Output:** 5VDC
- **Resolution:** 1/5um (0.001mm)
- **Available Travel Lengths:** 50mm-1000mm (Specific kit includes 150mm, 350mm, 900mm)
- **Cable Length:** 3 meters
- **Total Scale Length:** Measurement Length + 142mm
- **Scale Cross Section Size:** 21.5mm x 33.5mm
- **Package Dimensions:** 0.39 x 0.39 x 0.39 inches
- **Item Weight:** 11.02 pounds
- **Manufacturer:** PLPFUDVDZZ
- **Assembly Required:** No
- **Number of Pieces:** 1

7. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact the manufacturer, PLPFUDVDZZ, or your authorized dealer. Keep your purchase receipt and product model number (HS800-3) handy when contacting support. The product typically comes with a standard manufacturer's warranty. Details regarding the warranty period and coverage can be found in the documentation provided with your purchase or by contacting the manufacturer directly.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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