SURRYN SNS-3V

SURRYN SNS-3V Digital Readout Display User Manual

Model: SNS-3V
Brand: SURRYN

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the SURRYN SNS-3V Digital Readout (DRO) Display. The SNS-3V is designed for precision measurement and control in various machining applications, including lathes and milling machines. It offers a stable and reliable performance with a wide input voltage range.

2. Safety Instructions

- Always ensure the power supply matches the specified voltage range (80V to 260V) before connecting the device.
- Do not operate the DRO in wet or excessively dusty environments.
- Ensure all connections, especially to the linear scales, are secure and correctly polarized.
- Disconnect power before performing any maintenance or installation procedures.
- Only qualified personnel should attempt repairs or internal adjustments.

3. Product Overview

The SURRYN SNS-3V Digital Readout Display features a clear digital display for X, Y, and Z axes, along with an intuitive keypad for various functions. It is designed for robust performance in workshop environments.

Figure 3.1: Front view of the SNS-3V Digital Readout Display, showing the digital readouts for X, Y, and Z axes, and the integrated keypad.

Figure 3.2: The SNS-3V Digital Readout Display packaged with its essential accessories, including a mounting bracket, power cable, and the operation manual.

Figure 3.3: Rear view of the SNS-3V Digital Readout Display, detailing the power switch, AC input, and various axis input ports (X, Y, Z, EDM, RS232).

4. Setup and Installation

4.1 Mounting the DRO

1. Select a suitable location on your machine (lathe or mill) that provides clear visibility and easy access to the keypad.
2. Use the provided mounting bracket and hardware to securely attach the DRO display. Ensure it is stable and free from vibration.

4.2 Electrical Connections

1. **Power Connection:** Connect the provided power cable to the AC 80-260V input port on the rear of the DRO. Plug the other end into a compatible power outlet.
2. **Axis Connections:** Connect your linear scales (X, Y, Z axes) to the corresponding DB9 TTL signal input ports on the rear of the DRO. Ensure each scale is connected to its correct axis port.
3. **Optional Connections:** If applicable, connect EDM and RS232 cables to their respective ports.

After all connections are made, switch on the power using the ON/OFF switch located on the rear panel.

5. Operating Instructions

The SNS-3V DRO offers a comprehensive set of functions for precise machining operations. Familiarize yourself with the keypad layout and the following functions:

5.1 Basic Operations

- **Zero Point Clear:** Press the '0' button for the desired axis to set the current position as zero.
- **Reset:** Resets all axis readings to zero.
- **Millimeter/Inch Switching:** Toggle between metric (mm) and imperial (inch) units using the 'MM/INCH' button.
- **Absolute/Incremental Coordinate Conversion:** Switch between absolute (ABS) and incremental (INC) measurement modes. Absolute mode measures from a fixed origin, while incremental mode measures from the last set zero point.

5.2 Advanced Functions

- **200 Groups of Sub-Datums:** The system can store and recall up to 200 sub-datum points, allowing for complex part setups and quick transitions between different reference points.
- **Power-Off Memory:** The DRO retains its last settings and coordinate values even after power is turned off, ensuring continuity of work.
- **1/2 Center Function:** Quickly find the center point of a workpiece or feature.
- **Linear Error Compensation:** Compensates for minor inaccuracies in linear scales, improving overall measurement precision.
- **Calculator Function:** Perform basic arithmetic calculations directly on the DRO.
- **Radius/Diameter Function:** Easily switch between displaying radius and diameter values, particularly useful for lathe operations.

5.3 Machining Specific Functions

- **Circular Drilling:** Assists in drilling patterns on a circular path.
- **Oblique Drilling:** Guides drilling operations along an angled line.
- **Chamfer Processing:** Facilitates the creation of chamfers.
- **Arc Processing:** Supports machining along an arc path.
- **Lathe Function (Matching):** Specific functions optimized for lathe operations.
- **Rectangular Hole Step-by-Step Processing:** Aids in creating rectangular holes with precise step movements.

5.4 Precision Enhancements

- **Digital Filtering:** Reduces signal noise for more stable readings.
- **Vibration Filtering:** Minimizes the impact of machine vibrations on measurements.

6. Maintenance

- **Cleaning:** Regularly wipe the display and keypad with a soft, dry cloth. Avoid using abrasive cleaners or solvents.
- **Environmental Conditions:** Ensure the DRO is operated within its specified temperature and humidity ranges. Protect it from direct sunlight and excessive heat.
- **Cable Inspection:** Periodically check all cables for signs of wear or damage. Replace any damaged cables immediately.

7. Troubleshooting

7.1 Common Issues and Solutions

- **No Display/Power:**
  - Check if the power cable is securely connected to both the DRO and the power outlet.
  - Verify that the power switch on the rear panel is in the 'ON' position.
  - Ensure the power outlet is functional.
- **Incorrect Readings:**
  - Check all linear scale connections to ensure they are secure and connected to the correct axis port.
  - Verify that the linear scales are clean and free from debris.
  - Ensure the correct resolution and compensation settings are applied in the DRO's configuration (refer to the full operation manual for advanced settings).
- **Keypad Not Responding:**
  - Restart the DRO by turning it off and on.
  - Ensure no foreign objects are lodged under the buttons.

8. Specifications

Feature	Specification
Model	SNS-3V
Manufacturer	SURRYN
Input Voltage	80V to 260V AC
Signal Type	DB9 TTL Signal
Item Weight	4.41 pounds
Package Dimensions	1.18 x 0.79 x 0.39 inches
Number of Axes	3 (X, Y, Z)
Memory	200 groups of sub-datums, Power-off memory

9. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the documentation provided with your purchase or contact your retailer. Keep your purchase receipt as proof of purchase.