Varstrom Left PAS Sensor

Varstrom PAS Sensor Assistant Pedal User Manual

Model: Left PAS Sensor

1. Introduction

This user manual provides comprehensive instructions for the installation, operation, and maintenance of the Varstrom PAS Sensor Assistant Pedal. This sensor is designed to enhance your electric bicycle's pedal-assist system, ensuring a smooth and responsive riding experience.
The Varstrom PAS Sensor is specifically engineered for compatibility with Bafang hub motors, offering seamless integration and reliable performance. It utilizes advanced Hall effect technology to accurately detect pedal movement and provide efficient power assistance.

Figure 1: Varstrom PAS Sensor Assistant Pedal. This image shows the main component of the PAS sensor, including the disc and the attached cable with its connector.

2. Setup and Installation

Proper installation is crucial for the optimal performance of your PAS sensor. The Varstrom PAS Sensor is available in both left and right mounting options to suit various bicycle configurations. This guide focuses on the installation of the Left PAS Sensor.

Figure 2: Step-by-step installation guide for the PAS sensor on a bicycle crank. This image illustrates the four main steps for installing the sensor.

1. **Step 1: Remove the Crank**

   Carefully remove the bicycle crank arm from the bottom bracket. Ensure you have the correct tools for this procedure to avoid damaging the crank or bottom bracket components.

2. **Step 2: Install PAS Sensor in the Left Axis**

   Position the PAS sensor onto the left side of the bottom bracket spindle. Ensure it sits flush and is oriented correctly according to the bicycle's frame and the sensor's design. For bikes with a bottom bracket diameter of 15mm or less, the Left Side PAS Sensor is recommended.

3. **Step 3: Install the Crank and Tighten It**

   Reinstall the crank arm onto the bottom bracket spindle, ensuring it is properly aligned with the PAS sensor. Tighten the crank bolt securely to the manufacturer's recommended torque specifications. Verify that the sensor is not pinched or misaligned during this step.

4. **Step 4: Connect Wiring and Test**

   Connect the PAS sensor cable to your e-bike's controller. The sensor features a Juliet 3-pin waterproof plug for reliable connection. Once connected, perform a functional test to ensure the sensor is detecting pedal rotation and activating the electric drive correctly. You are now ready to enjoy cycling with pedal assistance.

Figure 3: Overview of PAS sensor function and installation considerations. This image highlights the high speed sensitivity due to dual Hall sensors and reiterates the installation guide for specific bottom bracket diameters.

3. Operating Principles

The Varstrom PAS Sensor operates on a 1:1 power ratio, utilizing dual magnetic ring Hall effect technology. This advanced system detects the dynamic torque generated by your pedaling motion and converts it into a DC signal, which is then sent to your e-bike's controller.

Equipped with 12 built-in magnets, the sensor provides high accuracy and sensitivity. When the pedal crank rotates forward, the sensor precisely measures this movement and signals the control unit to activate the bike's electric drive. This ensures a responsive and smooth power assist, making your ride more efficient and enjoyable.

Figure 4: Wiring diagram illustrating the connection of the PAS sensor to an e-bike system. This diagram shows the sensor's placement near the crank and its connection to the motor controller.

4. Maintenance

The Varstrom PAS Sensor is designed for durability and reliability. Its 0.45-meter cable comes with a Juliet 3-pin waterproof plug, ensuring excellent waterproofing and protection against various weather conditions.

- **Cleaning:** Periodically wipe down the sensor and its cable with a damp cloth to remove dirt and debris. Avoid using harsh chemicals or abrasive materials.
- **Cable Inspection:** Regularly inspect the sensor cable for any signs of wear, cuts, or damage. Ensure the waterproof plug is securely connected and free from corrosion.
- **Sensor Position:** Verify that the sensor remains securely in its installed position and has not shifted, which could affect its accuracy.
- **Water Exposure:** While waterproof, prolonged submersion or high-pressure washing directly on the sensor is not recommended.

5. Troubleshooting

If you experience issues with your Varstrom PAS Sensor, consider the following common troubleshooting steps:

- **No Pedal Assist:**
  - Check all cable connections, especially the 3-pin waterproof plug, to ensure they are secure and free from damage.
  - Verify that the sensor is correctly positioned on the bottom bracket spindle and has not rotated or become loose.
  - Ensure the magnets within the sensor are clean and free from metallic debris that might interfere with detection.
  - Confirm that your e-bike's controller is receiving power and functioning correctly.
- **Intermittent Assist:**
  - Inspect the sensor cable for any kinks, cuts, or internal damage that could cause intermittent signals.
  - Check for any loose connections at the sensor or controller end.
  - Ensure the sensor is not obstructed by other components or debris during pedal rotation.
- **Incorrect Assist Level:**
  - This is typically controlled by your e-bike's display or controller settings, not the PAS sensor itself. Refer to your e-bike's main manual for adjusting assist levels.

If these steps do not resolve the issue, contact customer support for further assistance.

6. Specifications

Below are the technical specifications and dimensions for the Varstrom PAS Sensor Assistant Pedal:

Electrical Parameters

Figure 5: Detailed electrical parameters for the PAS sensor, including voltage, current, and Hall electrical life.

Parameter	Value
Rated Voltage	4.5-6V (DC)
Current without Brake	<5mA
Current with Brake	<6mA
Lead Tension	>20N
Hall Electrical Life	>20M Times
Installation Position	>20M ohm
Insulation Wet Condition	>2M ohm
Corresponding Time when Brake	<0.001S

Plug Type	3Pin Male Connector (Juliet)

Physical Dimensions

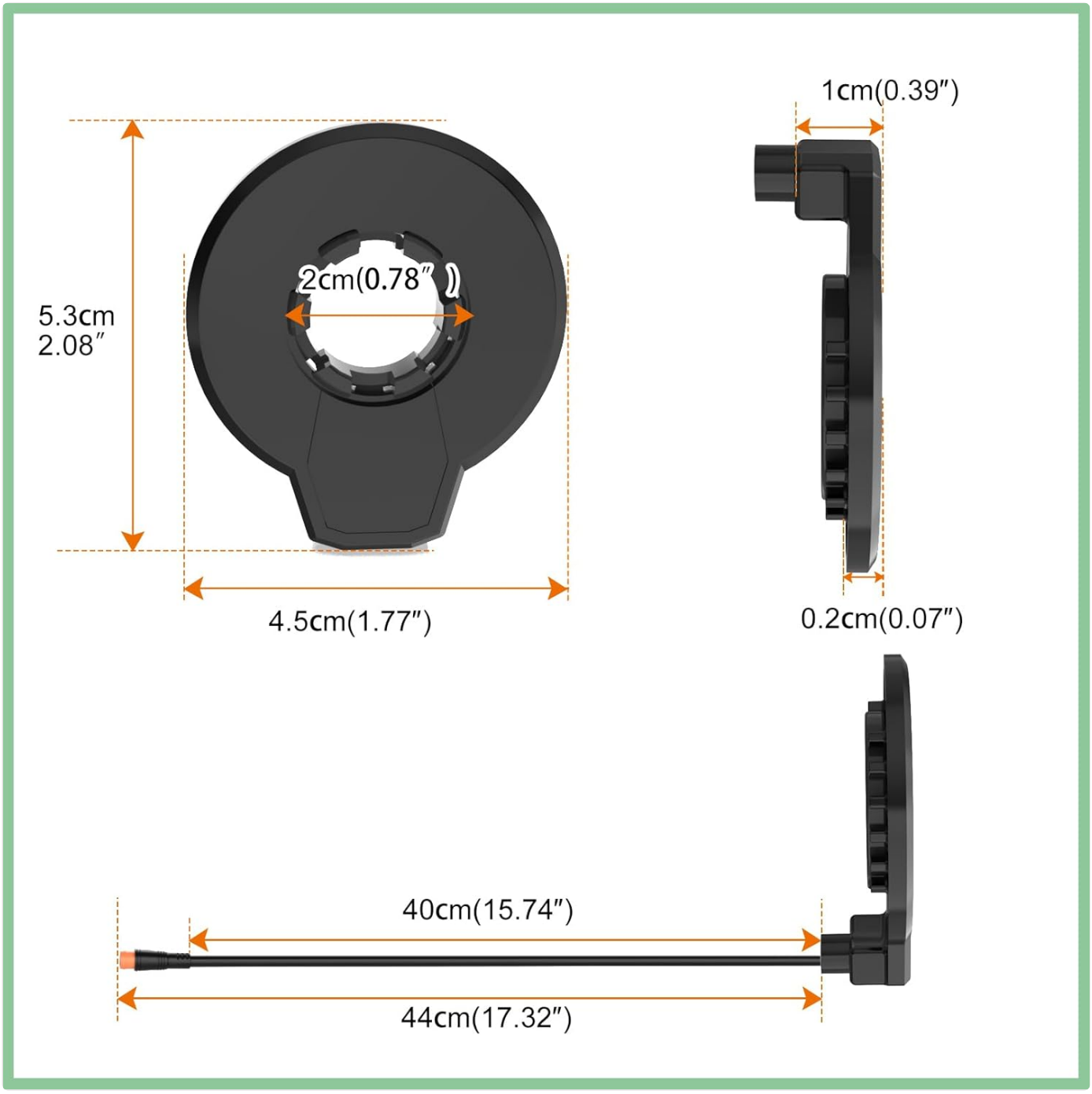


Figure 6: Dimensional drawing of the PAS sensor, showing key measurements in centimeters and inches.

Measurement	Value
Sensor Diameter	5.3 cm (2.08")
Sensor Width	4.5 cm (1.77")
Sensor Thickness	1 cm (0.39")
Cable Length (Sensor to Connector)	40 cm (15.74")
Total Cable Length (approx)	44 cm (17.32")

Item Package Dimensions	7.09 x 5.91 x 1.57 inches
Package Weight	0.03 Kilograms

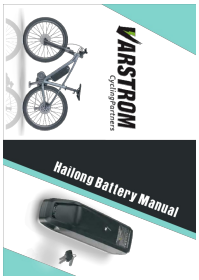
General Product Specifications

- **Brand:** Varstrom
- **Model Name:** Left PAS Sensor
- **Bike Type Compatibility:** Electric Bike
- **Special Feature:** Waterproof
- **Manufacturer:** Shenzhen Yihang Cross-border E-commerce Co., Ltd.
- **ASIN:** B0DMSQSZBW

7. Warranty and Support

For any questions, technical assistance, or warranty inquiries regarding your Varstrom PAS Sensor, please contact the seller or manufacturer directly. Please refer to your purchase documentation for specific warranty terms and contact information.
Manufacturer: Shenzhen Yihang Cross-border E-commerce Co., Ltd.

Related Documents - Left PAS Sensor

	EKD01-AKSM Displayer Manual: Comprehensive Guide for E-Bike Displays Explore the EKD01-AKSM and B02NU-AKSM e-bike display unit with this detailed user manual. Learn about installation, features, settings, Bluetooth connectivity, app integration, and troubleshooting for your electric bicycle.
	VARSTROM Hailong Battery Manual: Operation, Maintenance, and Troubleshooting Comprehensive user manual for VARSTROM Hailong e-bike batteries. Covers function introduction, packing list, installation, operation, maintenance, storage, troubleshooting, and warranty activation. Includes safety guidelines and FAQ.
	Accolmile Hub Motor Kit System Customer Manual A comprehensive customer manual for the Accolmile Hub Motor Kit System, detailing parts introduction, assembly instructions, wiring diagrams, and display instructions for various models.

	[DAYLYRIDE E-bike Hand Control Panel User Manual] Comprehensive user operation manual for the DAYLYRIDE E-bike hand control panel, detailing display functions, settings, controls, and troubleshooting for optimal e-bike performance.
	[YOSE POWER E-bike Kits User Manual: Front Motor with Front Light Installation Guide] Comprehensive user manual for YOSE POWER E-bike Kits, specifically the Front Motor with Front Light model. Includes safety regulations, installation steps, component lists, and resources for converting a bicycle to an electric bike.
	[YOSE POWER 500W Rear Motor E-bike Kits User Manual] Comprehensive user manual for YOSE POWER 500W Rear Motor E-bike Kits, detailing installation, safety regulations, component lists, and assembly guides for electric bicycle conversions.