PIHER sensing systems
an Amphenol® company

Position Sensor for Forklifts: the Next Generation of Mast Height Measurement Enhances Safety and Accuracy

The mast is the vertical assembly in material handling equipment, such as forklifts and cranes, that supports and guides the lifting mechanism, allowing them to raise and lower loads.

Mast Height Control uses sensors and electronic controls to detect mast oscillation and automatically adjust the reach mechanism to compensate. This significantly improves stability and handling at high lift heights, especially with heavy loads.

Overall, mast height control systems enhance safety in material handling by promoting stability, improving operator visibility, and enabling precise load handling.

To provide additional safety, the speed of the vehicle can be limited, based on the height of the mast, reducing the possibility of a vehicle tipping over.

Piher's magnetic multiturn sensors are built to withstand the rigors of everyday material handling operations and harsh environments.

Why Mast Height Sensing

Traditionally used hydraulic cylinders are making way for a more precise and efficient solution: ball screw actuators for lifting and roller screw actuators for tilting and side shifting.

The key to achieving this precision lies in the mast height control unit. This unit integrates a special bearing equipped with sensor electronics. Mounted directly on the mast, it continuously monitors the mast's position, speed, and acceleration as it travels. As the mast moves, the control unit sends a constant signal to the vehicle's controller.

In emergency situations, such as sudden stops or power failures, mast height control systems may have features to automatically lower the load or bring the mast to a safe position. This prevents uncontrolled movements that could result in accidents or damage.

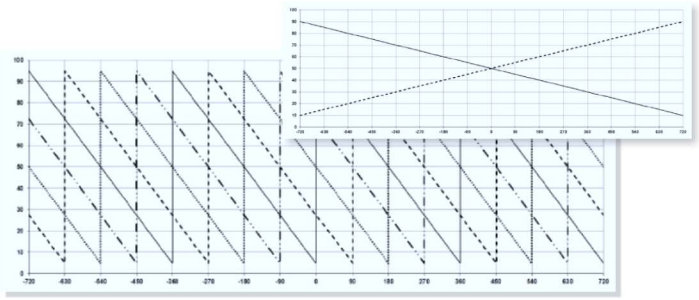
Piher'vechicles marketss The movement of the sproke e-actuactor Is converted in a usefull accurate digital signal

Measure Long, Keeps Resolution

Measures up to 10 meters of mast displacement without resolution loss, ensuring exceptional accuracy across the entire lifting range. With **True Power-On** Technology it retains absolute position data even during power outages, eliminating the need for recalibration and minimizing downtime and preventing loss of critical data.

Multiple Outputs, Full Redudancy

Four PWM outputs are complemented with two more analog outputs for additional redundancy and flexibility, offering a fail-safe mechanism and enhancing safety measures in material handling operations.



Rugged for Extreme Environments

Our position sensor is built to last in even the most demanding environments.

With magnetic shielding to eliminate interference, an IP69K seal for complete protection against dust and water ingress, and a wide operating temperature range of -40°C to +125°C, it delivers reliable performance in any environment.

BENEFITS

- True Non-Contact Technology
- Multiturn Design
- 360º Non Stop Rotation
- True Power-On
- High Redundancy
- Accuracy and Reliability
- Low Power Consumption

Applications:

- Forklifts of all capacities and lifting heights up to 10m
- Telehandlers and industrial lifting equipment
- Material handling automation systems
- Mobile elevating work platforms (MEWPs)
- Power steering
- Seat position

Non-contact operation

This sensors has no gears inside, so it is truly non-contact, avoinding tear and wear and providing a usefull life that equals or susrpases that of the vehicle where it is mounted.

Piher employs two primary technologies for mast heigh detection: **Hall Effect** and **Inductive - Eddy Current**. The selection of the most suitable technology for a particular application depends on the specific requirements of that application. For instance, Inductive technology is generally preferred for high-speed applications or environments with significant magnetic interference due to its inherent immunity to magnetic fields.

Customer-Specific Multitun Sensors

Piher's Mast Heigh Sensors specifications can be fully tailored to customer needs, including linear transfer functions, switch outputs, redundancy levels, linearity, return spring, turn count, IP sealing, wiring, connector types and form factor.

For OEMs who prefer a customized solution, our team will collaborate with you from product concept through manufacturing and certification to ensure that it meets all the requirements of the application.

Other Piher's Multiturn Sensors used in Industrial, Automotive and Off-Road vechicles markets

Connect With Us Today

Learn more about how our innovative mast height position sensor can elevate the safety, efficiency, and reliability of your material handling and forklift operations.

CONTACT

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