Progress in Positioning Technology has a Name: PSS

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Advanced industrial control and positioning system for material handling in automated storage facilities.

The PSS Positioning Solution System is the cutting-edge solution for industrial positioning. A common application for the PSS includes fully automated high-bay warehouses. The PSS instructs stacker cranes to move to warehouse target coordinates and ensures that storage and retrieval tasks are carried out with high precision. PSI Technics, with headquarters in Koblenz, Germany, specializes in research and development in the field of positioning technology. PSI Technics developed the PSS Positioning Solution System to offer positioning solutions tailored to the clients' needs and to simplify the integration of next-generation positioning technology into existing installations.

The features of the Positioning Solution System are not limited to distance measurement, but comprise time-optimized process control and positioning, among others. The PSS uses maximum acceleration and velocity as well as the required traveling distance to compute individual travel profiles. Acceleration and velocity profiles are solely based on linear ramps, irrespective of load, which completely eliminates creeping speed. Automated warehouse storage and retrieval tasks can be completed in the shortest amount of time. Dynamic parameters ensure that acceleration, velocity and positioning tolerances are adjusted while the vehicle is en route to its destination.

Due to its diverse set of features, the PSS takes on other popular positioning systems and measures up to the high standards set by the ICS5000. Two key features of the PSS, however, leave the leading standard far behind: What the competition promotes as product advantages merely constitutes the foundation of the PSS.

The first of these key features is ideal machine modeling. This means that the PSS completely adjusts not only to the motor drive, but to the machine itself. Where traditional systems solely adapt to the motor drive, the PSS models and attunes to all mechanical components. The PSS analyzes machine behavior to such an extent that it can perform a characterization for virtually any type of machine. The PSS simulates the machine profile during the entire characterization process. It factors in and compensates for the slightest machine oscillations, considerably improving positioning precision.

Fast and easy integration is the PSS' second key feature, as the PSS is a stand-alone digital control system. Once the PSS has been integrated into the application and communicates with process computers and storage management systems, it starts executing process and storage management command chains. All components communicate either via serial protocols or data highway. The PSS Positioning Solution System controls the motor drive by transmitting set point values to the converter via analog voltage or analog power. Unlike other positioning systems, the PSS Positioning Solution System is compatible with all motor drives. The system uses cutting-edge optical distance meters, encoders or barcode systems to determine the measurement values for set point control, which eliminates interdependencies between process control and positioning systems.

This unique independence makes the PSS ideal for system integration. The PSS can be implemented in installations from all manufacturers and works with all types of motor drives and controllers. It also works with older installations that use DC converters. The PSS, therefore, enables the continued use of existing components such as PLC's, converters and motor drives after retrofitting, providing considerable benefits and cost-savings to the customer. In addition, the PSS increases facility throughput by up to 15 percent even with the continued use of existing facility components.

Once the system has been prepared for retrofitting, such as after a thorough inspection of the existing facility, the retrofitting process only takes two to three days and can actually be done over the weekend. Under ideal conditions, a standard configuration can be implemented in as little as two days. The entire system is then commissioned by experienced PSI Technics engineers and technical staff who are familiar with every detail of the system.

Failure detection is another vital advantage of the PSS. Early warning limits result in a timely compensation of signal disruptions such as beam breaks. The diagnostic memory of 1 GB can store data over a period of several months. Thanks to detailed error analysis, failure messages and warnings are easily determined and understood. For example, the system detects gear play, cable stretching, slips, delays, oscillations, beam breaks and temporary interruptions of the distance meter signal. By prematurely detecting and intercepting oscillations or shifts in direction, the PSS enhances installation safety and subsequently performs an in-depth analysis of the causes of the failure.

A PSS positioning extension for bridge cranes, that includes skew controls as well as trolley and hoist control, is also available from PSI Technics as an integrated solution. The PSS' linear control features lessen wear and dampen load vibrations, preventing or reducing undesired oscillations to a minimum.

Customers benefit from these key PSS differentiators through a significant increase in efficiency. The PSS' inherent time-optimization functionality substantially enhances productivity and throughput. In addition, the PSS extends the facility's lifespan, expands product life cycles and cuts production costs. And that's not all: The FLP6000EOS software add-on further reduces facility wear and optimizes energy efficiency at the same time.

PSI Technics also offers on-site audits, which emphasizes PSI Technics' commitment to provide added value and increased benefits to its customers.

Overview:

Advantages of the PSS vs. Traditional Positioning Systems

> Oscillation compensation throughout the entire facility ensures increased precision (ideal machine modeling).

> Smooth integration enables fast and economic retrofitting (system independence).

> User-friendly (no programming skills or control engineering expertise required).

> No separate setup software required (software access via web-based interface).

> Powerful, reliable and cost-efficient hardware.

> Practically maintenance-free the modular design enables quick and easy service and replacement of spare parts.

> Shortest possible downtimes during retrofitting.

> Testimonials from internationally renowned companies, such as SKF, Daimler, and Volkswagen.

> Ideal return on investment.

> Market-leading and lastingly prolific solution.

About PSI Technics Ltd.

PSI Technics, with headquarters in Koblenz, Germany, was founded by Karl-Heinz Foerderer in 2005. PSI Technics specializes in developing and distributing innovative solutions for a wide range of applications in trade and industry.

The company focuses on industrial positioning systems, industrial image processing as well as thermal protection enclosures for sensitive sensors. In addition, PSI Technics offers EMC/EMI analyses for industrial plants and facilities as well as custom temperature and humidity monitoring and analyses using miniature data loggers.

PSI Technics works with renowned partners on a global level, with a main focus on Europe, Germany and North America. Since its foundation, PSI Technics has experienced dynamic growth in sales and in the number of qualified staff members.

For additional information, please visit the company's web site at
www.psi-technics.com.

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