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Progress in Positioning Technology has a Name: Positioning Solution System

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

"The Positioning Solution System is the cutting-edge solution for industrial positioning. A common application for the system includes fully automated high-bay settings. The Positioning Solution System instructs stacker cranes to move to target coordinates and ensures that storage and retrieval tasks are carried out with high precision. PSI Technics, with headquarters in Urmitz, Germany, specializes in research and development in the field of positioning technology. PSI Technics developed the 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 system 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 Positioning Solution System takes on other popular positioning systems and measures up to the high standards set by the ICS5000. Two key features of the Positioning Solution System, however, leave the leading standard far behind: What the competition promotes as product advantages merely constitutes the foundation of the Positioning Solution System.

The first of these key features is ideal machine modeling. This means that the Positioning Solution System completely adjusts not only to the motor drive, but to the machine itself. Where traditional systems solely adapt to the motor drive, the Positioning Solution System models and attunes to all mechanical components. The Positioning Solution System analyzes machine behavior to such an extent that it can perform a characterization for virtually any type of machine. The Positioning Solution System 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 Positioning Solution System's second key feature, as the Positioning Solution System is a stand-alone digital control system. Once the Positioning Solution System 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 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 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 Positioning Solution System ideal for system integration. The Positioning Solution System 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 Positioning Solution System, 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 Positioning Solution System 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 Positioning Solution System. 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 Positioning Solution System enhances installation safety and subsequently performs an in-depth analysis of the causes of the failure.

A Positioning Solution System 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 Positioning Solution System's linear control features lessen wear and dampen load vibrations, preventing or reducing undesired oscillations to a minimum.

Customers benefit from these key Positioning Solution System differentiators through a significant increase in efficiency. The Positioning Solution System's inherent time-optimization functionality substantially enhances productivity and throughput. In addition, the Positioning Solution System 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."

Advantages of the Positioning Solution System 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.

PSI Technics - www.psi-technics.com**Advanced industrial control and positioning system for material handling in automated facilities**

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