Intelligent Print Mark Detection Sensor IDS

WIEDEG ELEKTRONIK

Intelligent Print Mark Detection Sensor for the realization of integrated register control systems as part of drive automation systems from different manufactures

- **Easy embedded in drive automation systems to realize powerful, economical register controls.**
- **Favourably priced alternative to stand alone register controls and integrated camera systems.**
- **Connection via real time ethernet (at present PROFINET IRT – and EtherCAT). Open communication solution for the implementation of additional protocols.**
- **Use of a white-light-sensor with high resolution grey scale value measurement for reliable detection of slight colour- and reflection-differences.**
- **Sampling of the web via fibre optic link with micro objective (lens), with a precision in the range of a few micrometers, at web speeds up to 1000 m/min.**
- **Detection of all common classical print marks (wedge- and block-marks), with adjustable dimensions.**
- **Coverage of a wide spectrum of colours, varnishes, coatings and embossings by means of optimized signal analysis.**
- **Easy handling by means of a wide variety of customer supporting features.**
- **Availability of the complete hard- and software for the embedding of the register control.**
- **Range of application from plain register controlled coating/laminating to sophisticated flexo- and gravure-printing.**
- **Optical ex-protection and IP65 degree of protection for use in harsh environment conditions.**

With the Intelligent Print Mark Detection Sensor IDS, WIEDEG offers a solution for the universal integration of powerful and cost efficient register controls as part of drive automation systems from different providers.

The IDS is working on the basis of an integrated print mark detection sensor with fibre optic link and microobjective. The type is a white-light-sensor with high resolution grey scale value measurement, which ensures a reliable detection of slight colour- and reflection-differences between web and print mark.

The print mark detection sensor DS is equipped with a similar sensor, and can be connected addionally for enhanced print mark acquistion tasks, when a 2. measuring point is required.

The picture on the backside schematically shows the set up of an integrated register control with IDS for one print unit.

The local IDS samples the print marks on the web optically by means of a fibre optic link. It thereby detects the length- and side-register deviation, in all practical relevant operating modes, and transmits them via real time ethernet in hard real time mode to the drive control system.

The detection of the register-deviations is done with high accuracy in the micron-range and web speeds up to 1000 m/min can be processed.

Additionally to the cyclic control data the IDS provides all the necessary data for a powerful visualization and diagnosis of the register control, employing the asynchronous data exchange.

The register control with IDS offers a lot of user supporting features, which facilitate the handling for him. There is f.i. a sensor automatic with travel measurment integrated, which automatically makes possible an optimal evaluation of the print marks and a register control even under tough conditions.

With the IDS all common classical print marks, in other words all established wedge- and block-marks, can be detected. The dimensions of the marks are adjustable in wide ranges.

As far as possible, depending on the build up of the machine, the register actuation happens through drives that already exist for the printing.

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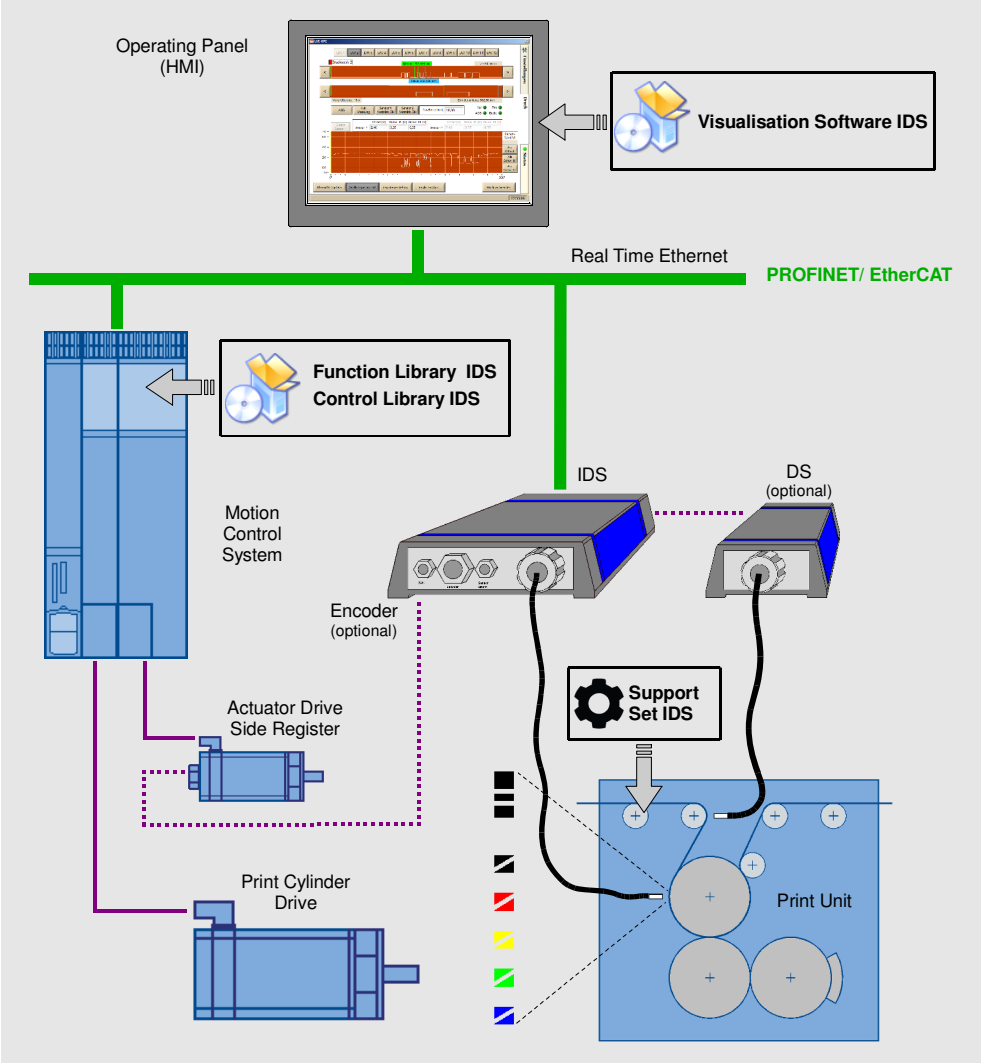

The length register adjustment normally is realized with the print cylinder drive and the side register alignement with a separate, simple actuation drive for the positioning of the print cylinder in axial direction. The position of the actuating drive can optionally be derived by the IDS and evaluated in the drive control system.

As implied in the block diagram, we are additionally offering the complete software and special accessories for a straightforward and efficient embedding of the IDS register control into the drive system. From the visualization software, over the function- and controller-library, to the mechanical support set, everything what the user needs for that reason, is available.

Besides the existing real time ethernet linkages, further interfaces can be realised with relative minor effort, because of the open structure.

Because of the combination of cost efficiency and performance the IDS can be used in price sensitive segments like register controlled coating/laminating as well as for sophisticated flexo- and gravure-printing applications. Optical ex-protection and IP65 degree of protection provide access to applications with harsh environmental conditions.

The range of application for the IDS register control extends to nearly all practical applications using wedge- and block-marks. In part it offers considerably more favourable prices in comparison to other register control systems and is in the main features of performance at least on par.

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