# Suppliers of information for Industry 4.0

Smart sensors ensure efficient machine communication

Waldkirch, November 2016 – Networked production and control processes in complex machine environments are key to the industrial future and are what is making Industry 4.0 possible in the first place. Smart sensors already support dynamic, real-time-optimized, and self-organized industry processes. They record real operational statuses, turn these into digital data, and share them automatically with the process controller.

Smart sensors generate data and information which goes beyond conventional switching signals or measured process parameters, and are able to share this with the controller using technology such as IO-Link. Conversely, they are also able to receive commands and parameter data directly from the controller and, as a result, adapt constantly to new requirements. This allows them to create substantial increases in efficiency, more flexibility, and better planning security for preventative system maintenance.

The added value of sensor communication depends significantly on the quality and stability of the delivered data. In order to create the best-possible basis for a future-ready automation system, SICK has equipped its smart sensors with special properties to ensure they provide exactly the right level of performance for every application.

“Enhanced sensing” delivers reliable detection and measurement results which have a direct impact on system throughput. For the “Efficient communication” feature, smart sensors are able to communicate with higher-level control systems via IO-Link – making dynamic configuration changes as well as plug and play device replacements in plants a reality. The “Diagnostics” functions comprise automated sensor self-monitoring and process parameter monitoring for preventative device and system maintenance. “Smart tasks” offer intelligent additional sensor functions on the one hand and direct networking of multiple sensors on the other in order to manage partial applications faster, more efficiently, and more cost-effectively.

## From smart sensors to smart application solutions

Smart sensors are set to open up new potential incrementally: They are designed for gradual increases in efficiency in existing tasks, such as parameter downloading for fast retooling as well as simple device replacement, configuration management, and condition monitoring. The integrated additional functions – and, as a result, the option of relocating processing power from the automation system to field devices – represent a future-proof approach to making automation networks more efficient and helping them to deliver better performance. They make it possible to generate new, higher-quality information that goes beyond object detection, accommodating the application in question. Where necessary, this information can be generated in combination with another sensor and provided for higher-level systems (PLC, ERP, and cloud systems).

Image: Smart-Sensors\_IM0060290.jpg  
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SICK is one of the world’s leading producers of sensors and sensor solutions for industrial applications. Founded in 1946 by Dr.-Ing. e. h. Erwin Sick, the company with headquarters in Waldkirch im Breisgau near Freiburg ranks among the technological market leaders. With more than 50 subsidiaries and equity investments as well as numerous agencies, SICK maintains a presence around the globe. In the fiscal year 2015, SICK had more than 7,400 employees worldwide and achieved Group sales of just under EUR 1.3 billion.  
More information about SICK is available on the Internet at http://www.sick.com or by phone on +49 (0) 7681 202-4183.