

Developments in sensor solutions enable optimum performance

Recent years have witnessed major new developments in sensor solutions for handling, assembly and robotics. We are no longer confined to sensors choices from the past with components becoming more powerful, compact, and universal, and are now merging directly with the actuator and comparatively easy to set up.

Programmable Magnetic Sensor

In the past, industry has been confined to a limited choice of sensors including Inductive Proximity, Hall Effect and Reed. Developments in technology have increased functionality and reduced size of sensors and the new crop of products such as the MMS-P make set up easier than ever. Instead of time-consuming mechanical adjustment of the switching points, the MMS-P sensor can be programmed in a few short steps. The teaching tools required to do this are available either as cable-based connection plugs or as contact-free magnetic teaching tools. Because the sensor is programmable, hysteresis can now be adjusted allowing set points to be programmed tighter. Compared to conventional magnetic switches, users can save up to 90% on set-up time.

Flexible Position Sensor

For applications requiring flexible sensing because of multiple sized parts the Flexible Position Sensor FPS can be used allowing the system to recognize up to 5 points which are freely programmable with the included FPS processor. The FPS sensor uses a touch pad interface with LED display for programming set points. Improving flexibility even more, the FPS can be interfaced digitally through a network allowing the sensor to be programmed remotely. For continuous quality control the FPS allows data logging and monitoring of temperature and input voltage.

Analog Position Sensor

Today's manufacturing environment demands even more precision requiring continuous quality control that can determine good parts from bad in real time. Analog Position Sensors APS and MMS-A provide continuous feedback of position with analog output allowing grippers to become part of the quality process. The APS and MMS-A sensors create an analog signal output of the gripper jaw position providing information to the controller that can compare the part to a baseline and monitor the process for tool wear and part flaws. APS uses an inclined ramp to drive a linear transducer within the stroke of the jaw providing 0-10v output. The MMS-A uses an electronic sensor to read the magnetic field of the piston mounted magnet to create analog voltage output and no controller is required, only an analog card to read the provided 0-10v output.

Optical Position Sensor

If you need to monitor the distance between the gripper and part, you can either use complex vision systems or entrust the task to the OAS optical distance sensor. This turns simple gripping modules easily into vision grippers with standard catalog items. The OAS can be integrated directly into the gripper center, for example the PGN-plus universal gripper or the MPG-plus gripper for small components. From there, it continuously supplies the control unit with distance information for the part and whether there is a part to be gripped between the gripper fingers. The sensor makes it possible for grippers to differentiate between parts, detect their position, pick them up "on the fly" from a moving belt, stack them, detect wrongly gripped parts and increase reliability when moving the gripper.

SCHUNK, the competence leader for clamping and gripping systems, offers a vast line of products for the manufacturing industry that can work in almost any environment. All components from grippers and rotary units to workholding and toolholding are designed to work in synergy to create a complete customer solution.

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