

Modules for industrial service robotics

Pilz has expanded its portfolio by the Service Robotics product range. The modules include initially the robot arm, the control module, and the operator module.

The essential features are openness, i.e. due to the ROS (Robot Operating System) software framework and the optional CANopen connectivity. Other features include user-friendly operation, and plug-and-play. This enables users to assemble their individual service robot applications.

The robot arm, control module, and operator module together form a package certified by the German statutory accident insurance association (DGUV) in accordance with EN ISO 10218-1 "Robots and robotic devices". They provide the requirements for the implementation of safe robot applications. This simplifies the way to the obligatory CE marking. The areas of application also include pick-and-place applications and modular semi-automated small robot cells in industry.

The supplier has developed the robot arm, which can be loaded with up to 6 kg. Due to 6 axes, a weight of 20 kg and the 24-V_{DC} supply voltage it is suitable for use in mobile applications. An example is combination with an automatic guided vehicle (AGV).

Functional-safe movements

The PRCM control module takes care of the movement and safety control of the robot. According to the plug-and-play principle, users can connect the modules and use them immediately. The control module comes with a CANopen interface. It can be programmed with PLC languages compliant with IEC 61131-3. The run-time system is integrated into the open-source ROS. The supplier provides also ready-to-go application software routines. This software offers functions for sensor processing, evaluation, planning and control of robots.

The PRTM operator module enables the operation of the robot via a graphical user interface. The supplier has developed the operator and visualization system. The



Figure 1: The shown modules are designed for service robot applications in industrial environments (Photo: Pilz)

panel offers the functions of operating mode selection, emergency stop and diagnostics. It permits simple setup and teaching of the robot arm via a sensitive touch display.

"Pilz is a technology company that offers complete solutions for safe robotics", explained Susanne Kunschert, Managing Partner of Pilz. "As a system supplier for service robotics, Pilz can support users when implementing their individual robot applications, including the requires safe sensor technology and the required services on the way to CE marking", she added. On the Automatica 2018 fair (June, 19 to 22, 2018) in Munich (Germany), Pilz presents on its booth in hall B4 its service robotics module to the public for the first time. ◀

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