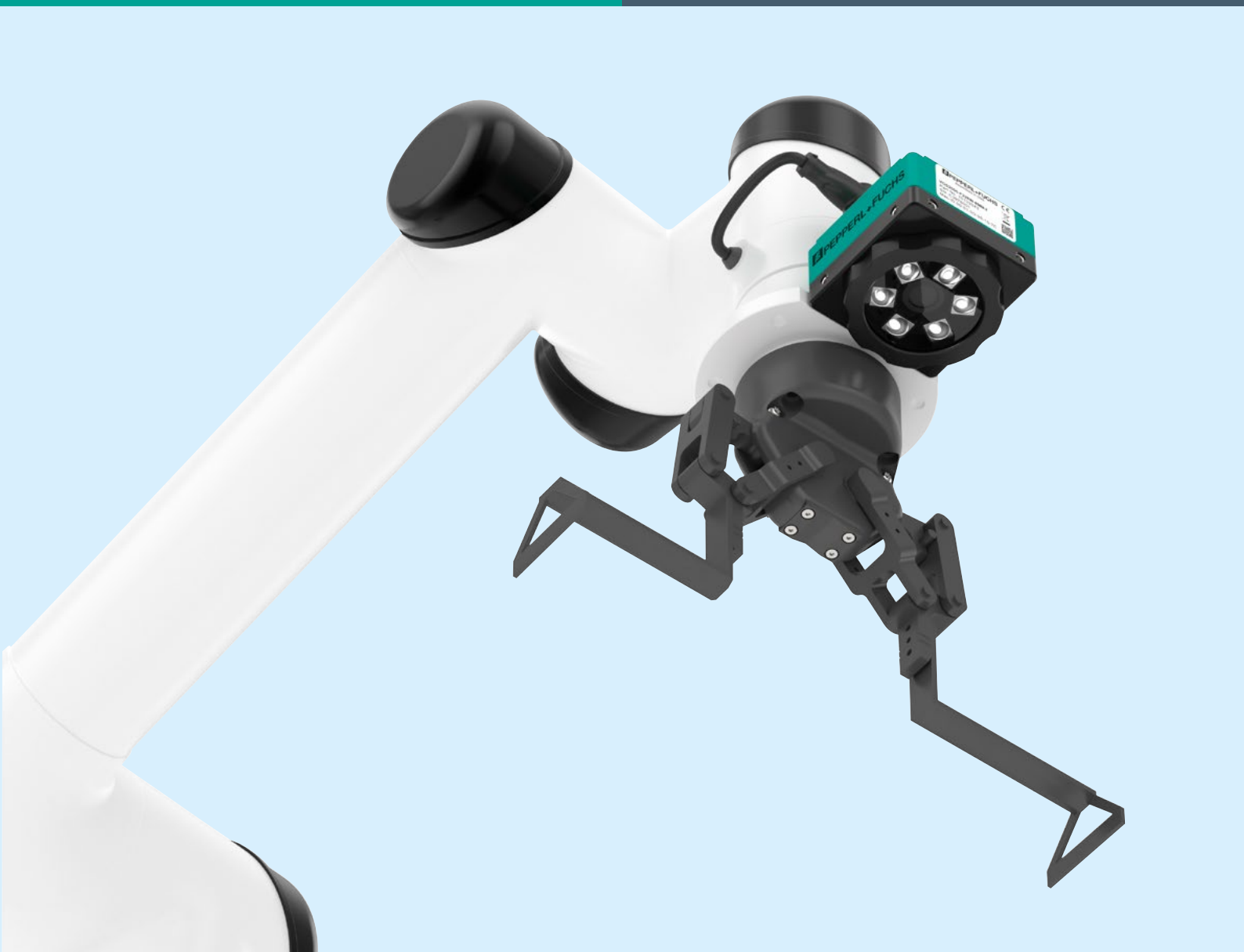


Targeted Control of Mobile Robotic Arms

Vision Sensor VOS2000
with Internal Illumination and
Comprehensive Software

At a Glance

- Integrated vision tool set with numerous software tools for detection and alignment, positioning and guidance, optical gauging, and identification and text recognition (OCR)
- Graphical user interface for simple commissioning and parameterization
- Integrated analyzer for simple integration and user-defined data output
- Electronic compensation for difficult optical conditions
- All relevant interfaces are integrated, allowing for end-to-end communication all the way through to the ERP system



The Application

Collaborative robots with multi-axis arms are increasingly being used in production and intralogistics, often mounted on an automated mobile platform (AGV or AMR). This type of unit is used for various tasks, for example feeding raw materials or individual components into a machine or process step. The robot must first detect the position of the part to be picked up. A characteristic check is often required to select a specific part before picking it up. Specific identification or a counting function may also be required.

The Goal

The control panel requires optical information in order to detect the target objects and determine the target positions. This requires a camera that can ideally perform as many different tasks as possible: Characteristic checks of the parts to be picked up using contours, colors, or pattern comparison; position detection (position and orientation); counting for comparing the target and current status; and individual identification and assignment of parts using 1-D and 2-D codes. The device must also provide sufficient lighting for each situation and offer sufficient resolution to distinguish relevant features. Space is limited in many applications, meaning a compact design with as many mounting options as possible is required.

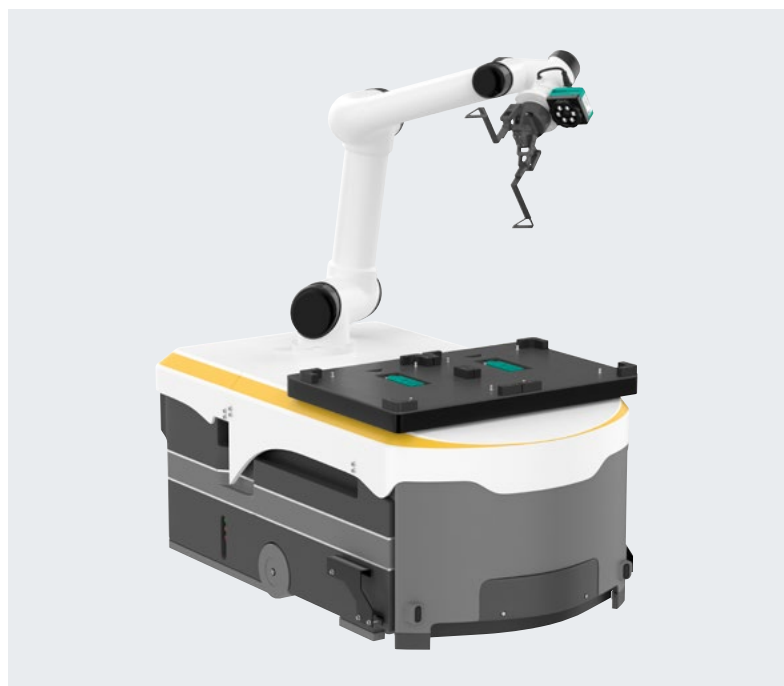


The Solution

The 2-D universal vision sensor VOS2000 is ideally suited for mounting on a mobile robotic arm due to its compact design. A comprehensive software package with flexible vision tools that can be combined and perform virtually all standard tasks is included in delivery. The robotic arm is equipped with tools for position and shape detection, contour comparison, and identification. Devices from the VOS series offer high resolution and a wide range of lighting options. The measuring field can be adapted to the application. The vision sensor is not only able to detect component characteristics, but also accurately evaluates the optical information.

The Benefits

VOS universal vision sensors are suitable for use in many different applications. The high resolution of the camera and the large sensing range are especially important for using the sensors on robotic arms. The range of integrated vision tools allows for flexible use. The VOS2000 universal vision sensor with internal illumination has a mechanically adjustable focus, so it can be used at various measuring distances. Other models are equipped with a C-mount connection to allow the sensor to be combined with external lenses and lighting. A wide range of accessories and the comprehensive vision tool set mean that there is no need to purchase additional hardware or software.



Technical Features

- Large read range, typically $295 \times 221 \text{ mm}^2$
- Resolution: $1280 \times 960 \text{ px}$
- Variable detection range (up to 2 m) due to adjustable focus
- Wide selection of lighting and lenses
- Interfaces: TCP/IP, PROFINET, EtherNet/IP, RS-232, and I/O
- Storage of up to 32 jobs on the sensor
- Output string formatting

