

VISOR® Robotic

An eye on everything – the vision sensor for robotics applications



The VISOR® Robotic detects the position of the component in a load carrier and transmits the gripping position directly to the robot.



The VISOR® Robotic determines the exact position of the sensor housing. Offset data is used to correct the robot's trajectory.

HIGHLIGHTS OF VISOR® ROBOTIC

- Compact and lightweight housing for moving or stationary applications
- Calibration methods tailored to the application
- 2D or 3D localisation in robot coordinates
- Simplified setup through 3D gripper point transformation
- Less robot programming when images are captured in diverse positions
- Different hardware versions up to 5 megapixel chip

Material feed

Feeding systems in a production line are becoming increasingly versatile – in addition to universal load carriers, components can be supplied with utmost flexibility using hopper feeders. Thanks to the VISOR® Robotic, components can be reliably located and gripped with both feed options. When loose components are supplied, the sensor not only checks their position but also inspects the free space around the gripper. The VISOR® determines both sets of information and sends them to the robot controller via one of the integrated and standardised process interfaces. The process is managed on the basis of this information – the object is gripped or the feeder is triggered.

The application can also be flexibly adapted to individual goods carriers without the need for a costly centring device. The VISOR® detects the position and the fill level of the carrier and transmits this information to the robot. If the camera is mounted in a stationary manner, this is cycle time-neutral.

Processing of components

What happens after components have been reliably collected by the gripper? The VISOR® Robotic also supplies important information for the next work steps, and demonstrates its skills in robot-controlled applications, such as the placing of screws, the mounting of clips or the application of glue. The detection of component positions is carried out effortlessly; this allows the correction of any offset and increases the quality of production. Knowledge of the exact position of a component ensures, for example, the precise insertion of a windscreen. Mechanical effort is reduced, and the production line becomes even more flexible. The VISOR® Robotic concept enables direct communication between the VISOR® and the robot, an additional instance is no longer necessary for many applications.

VISOR® Robotic – product overview				
	Product variants	Resolution	Focal length	Integrated lighting
V50x-RO-P3-C-2	Professional	2560 × 1936 mono/color	C-Mount	None
V20x-RO-A3-xxx	Advanced	1440 × 1080 mono/color	wide	White, red ¹ or infrared ¹ LEDs
V20x-RO-A3-xxx			medium	White, red ¹ or infrared ¹ LEDs
V20x-RO-A3-xxx			narrow	White, red ¹ or infrared ¹ LEDs
V20x-RO-A3-C-2			C-Mount	None
V20x-RO-P3-xxx	Professional		wide	White, red ¹ or infrared ¹ LEDs
V20x-RO-P3-xxx			medium	White, red ¹ or infrared ¹ LEDs
V20x-RO-P3-xxx			narrow	White, red ¹ or infrared ¹ LEDs
V20x-RO-P3-C-2			C-Mount	None
V10-RO-A3-xxx	Advanced	800 × 600 mono	wide	White, red ¹ or infrared ¹ LEDs
V10-RO-A3-xxx			medium	White, red ¹ or infrared ¹ LEDs
V10-RO-A3-xxx			narrow	White, red ¹ or infrared ¹ LEDs
V10-RO-A3-C-2			C-Mount	None

¹ Only with monochrome version

VISOR® Robotic

System description

A diverse specialist

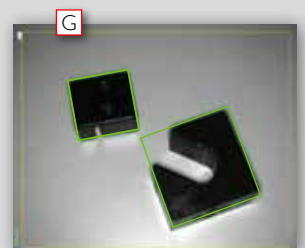
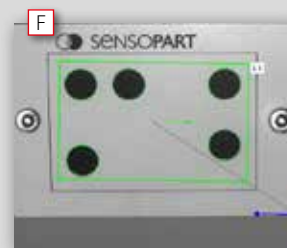
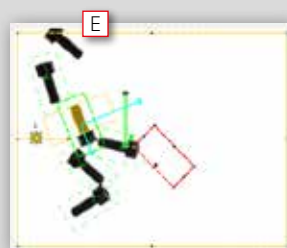
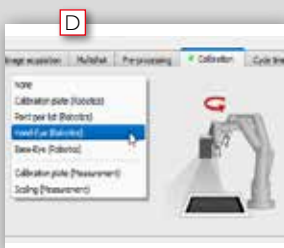
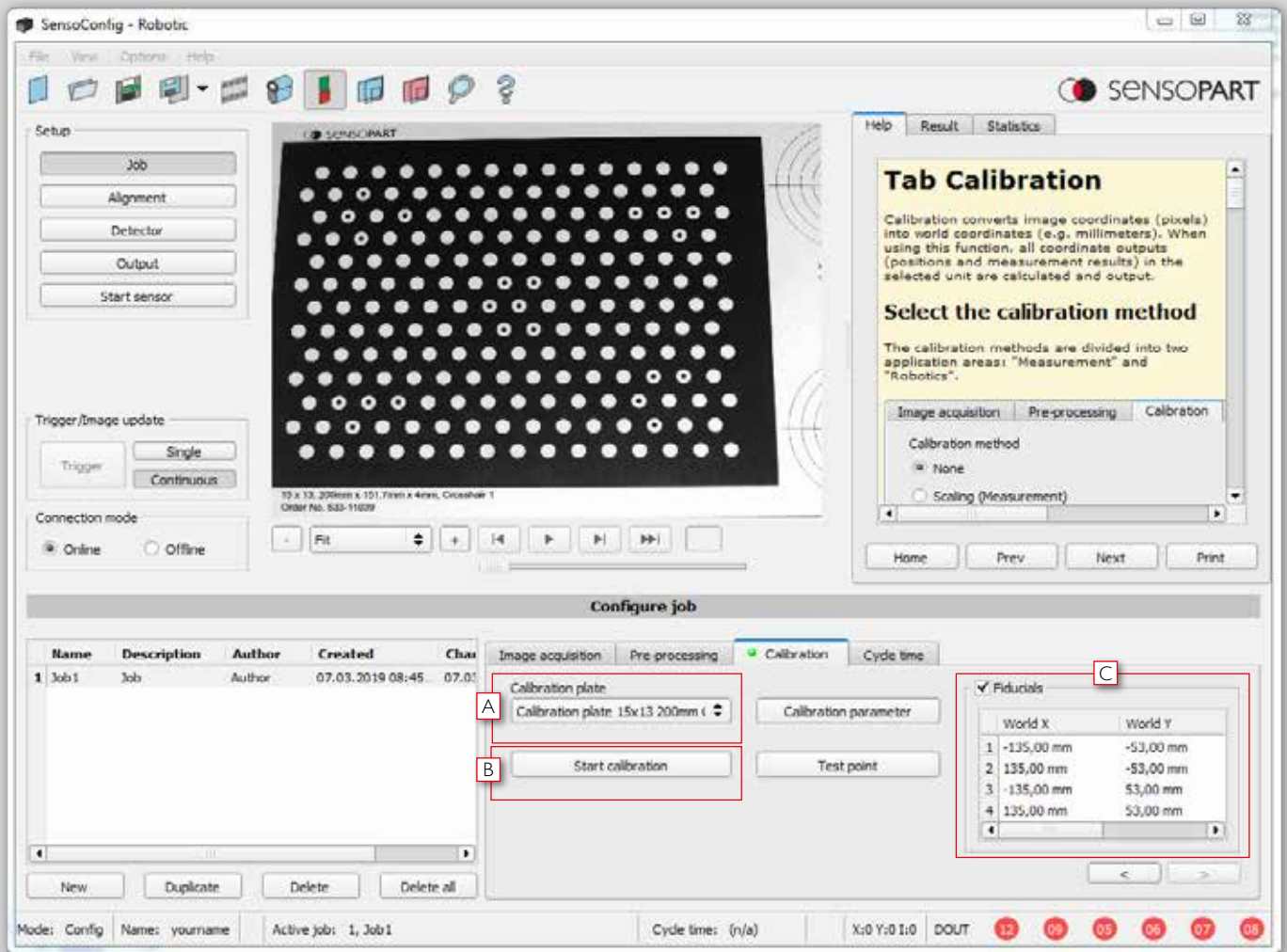
Expectations of today's robotics solutions are steadily rising in the context of Industry 4.0, paired with a simultaneous desire for greater ease-of-use. And this is precisely where the VISOR® Robotic demonstrates its outstanding ability. Available in several versions, it offers the perfect solution for a variety of automation tasks. Designed with integrated and standardised interfaces, VISOR® Robotic can be easily incorporated in existing installations and systems, and thanks to different calibration methods and flexible data structures, it is also suited to a diverse range of procedures.

Product variants VISOR® Robotic

VISOR® Robotic Robotics, presence, completeness, measurement, positioning		
	Advanced	Professional
Resolution		
V10 (800 × 600): Mono Color	✓	–
Images per second: Mono Color	75	–
V20 (1440 × 1080): Mono Color	✓	
Number of images per second: Mono Color	40 20	
V50 (2560 × 1936): Mono Color	–	✓
Images per second: Mono Color	–	22 8
Lighting	white, red ¹ , infrared ¹	
Multishot (Mono)	–	
Target laser	✓	
Lenses		
V10 wide medium narrow c-mount	✓ ✓ ✓ ✓	–
V20 wide medium narrow c-mount	✓ ✓ ✓ ✓	
V50 wide medium narrow c-mount	–	– – – ✓
Interfaces	Ethernet/EtherNet/IP/PROFINET	
Inputs outputs selectable	2 2 6	
Encoder input	✓	
Ethernet EtherNet/IP PROFINET SensoWeb	✓ ✓ ✓ ✓	
Service Port	✓	
Job/Detectors		
Number of jobs (max.)	255	
Number of detectors per job (max.)	255	
Calibration		
Scaling Perspective	✓ ✓	
Point-pair list Calibration plate (robot)	✓ ✓	
Hand-eye Base-eye calibration (robot)	–	✓
Preprocessing		
Preprocessing filter	✓	
Multiple image capture Shutter variation	✓	
Freeform search area	✓	
Position tracking		
Contour comparison (translation, rotation 360°)	✓	
Pattern matching (translation, rotation 360°)	✓	
Edge detection (translation, rotation)	✓	
Object detection		
Contour Multiple detection	✓ ✓	
Pattern comparison Multiple detection	✓ ✓	
Grey level Contrast Brightness	✓	
Calliper	✓	
BLOB	✓	
3D contour	–	✓
Identification		
Barcodes Datacode	–	✓ ✓
Barcode Advanced Datacode Advanced	–	✓ ✓
Clear text (OCR)	–	✓ ✓
Robotics functions		
Result offset image 2D 3D	✓ ✓ ✓	
Checking space around gripper	✓	
Color detectors V10C / V20C / V50C		
Color field Color value Color list	✓ ✓ ✓	
Color distance Binarisation	✓ ✓	
Result processing		
Result processing - Text Math	– ✓	✓ ✓

¹ not with color hardware V10C/V20C

² only color hardware



Guide to user interface

- A Select calibration plate:** choice of four different sizes.
- B Start calibration:** VISOR® is calibrated in just one click.
- C Fiducials:** image coordinates mapped to robot coordinates at four points.
- D Calibration method:** a calibration method tailored to the application can be chosen in a clear selection list.
- E Gripping space check:** a freely accessible object is always output if available.
- F Result offset:** define the result point, and therefore the position that the robot moves to on the component, yourself.
- G Blob detector:** localise components regardless of their shape and size. No need to teach a reference.