Completely modular and highly precise

Automated joining processes with

VMT™ Sense&Place

VMT
PEPPERL+FUCHS
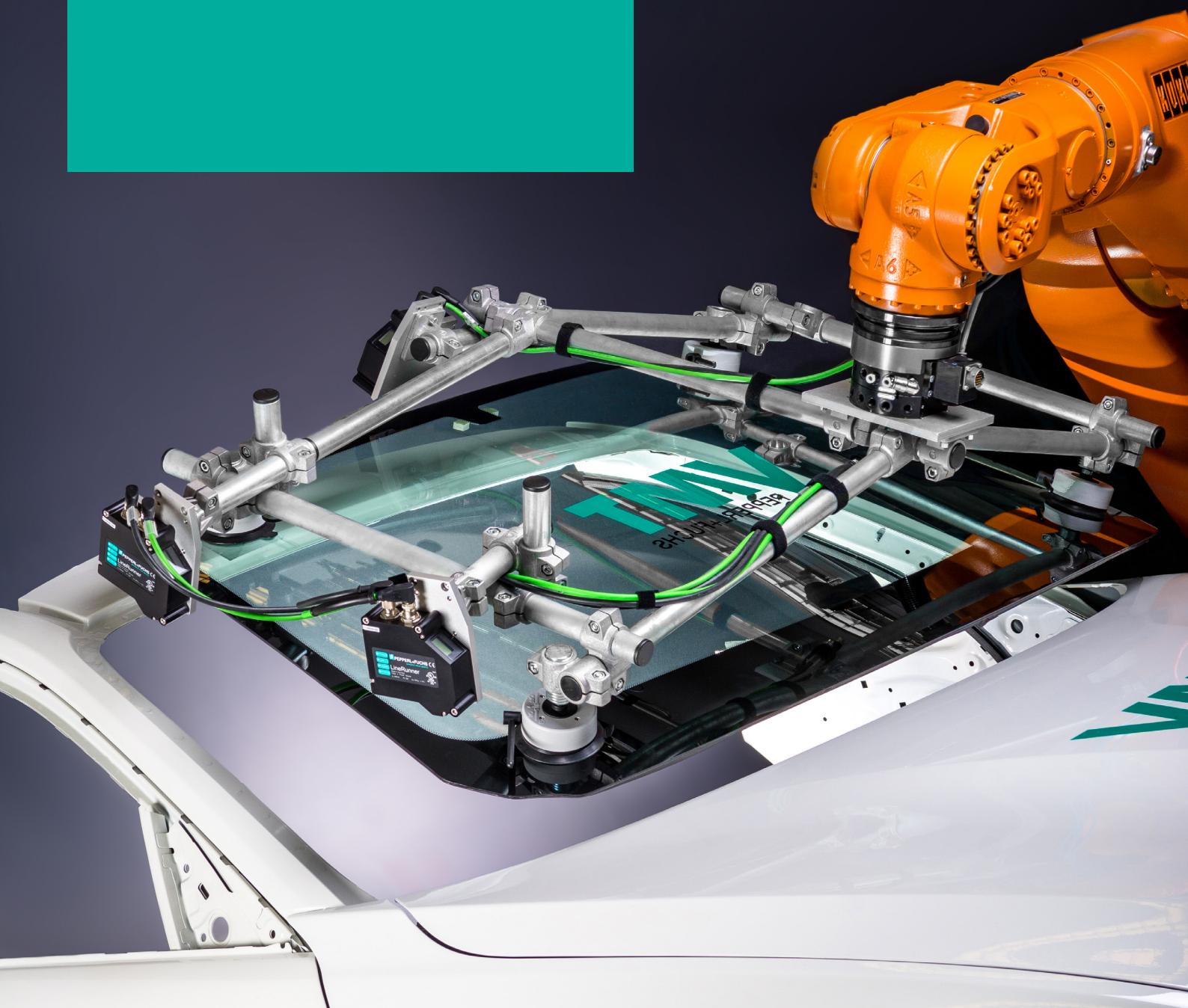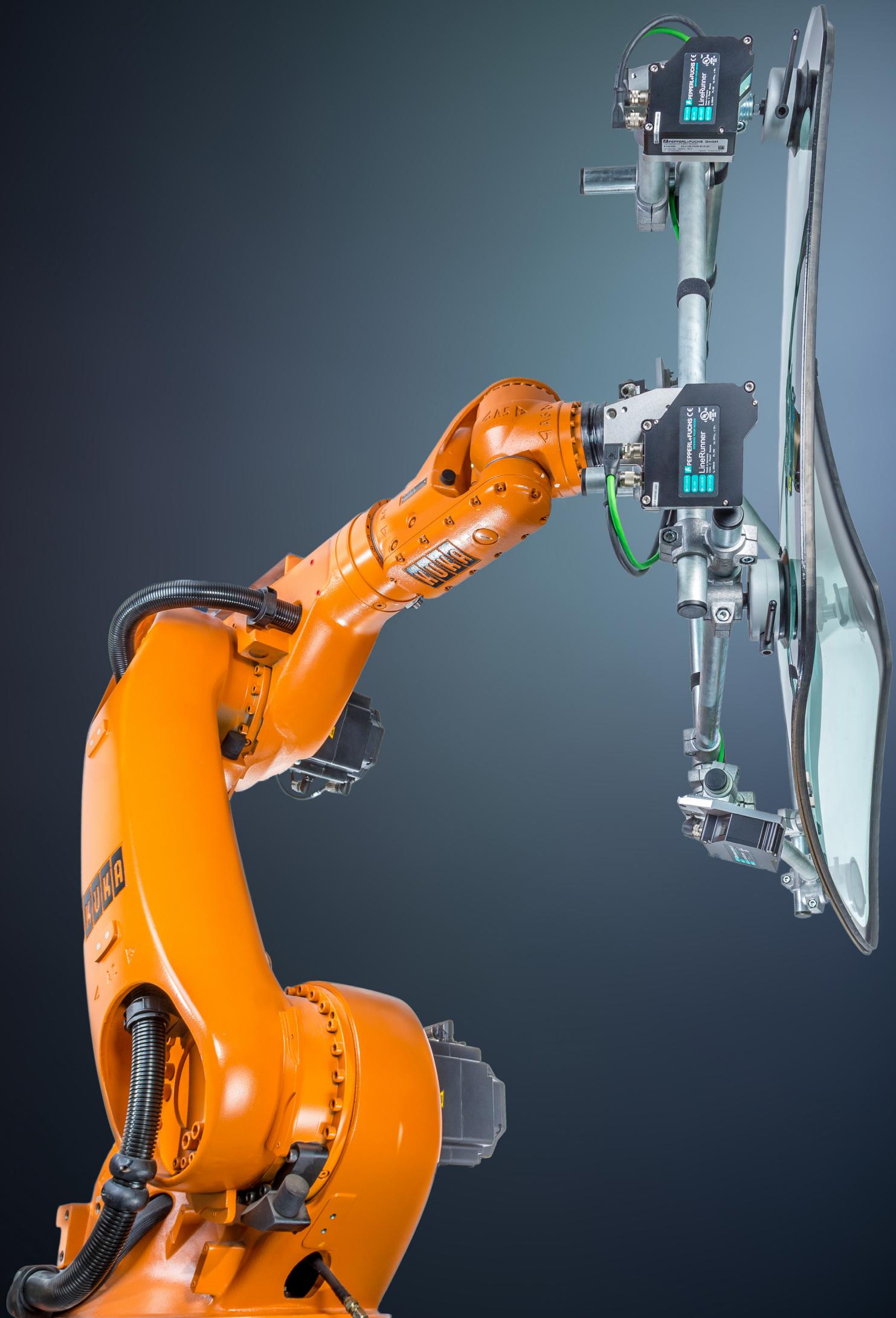
Joining All Components with Absolute Precision

Joining processes pose major technical challenges for sensor technology and data processing due to complex, time-critical, and high-precision requirements.

VMT™ Sense&Place has distinguished itself as an all-round system for joining applications. With versatile and flexible sensor technology, the system can be adapted to almost any task imaginable, regardless of deformation and component tolerances.

We achieve the right level of flexibility and speed, either with a stationary sensor over which a component is guided through a robot or with a sensor system that has been specially configured for your component.

VMT™ Sense&Place is based on color-independent laser-line triangulation technology, which can generate height profiles even based on critical substrates. Intelligent VMT™ software processes this profile data via a compensation algorithm to generate corrective movements for the robot. To keep programming simple, VMT™ also offers a technology package for robots.

Highlights

- **Flexibility**
  Number of sensors can be selected based on requirements and cycle time—from a single, stationary sensor arrangement to a custom multi-sensor robot tool

- **Colour tolerance**
  Detection of any color on various surfaces with laser class 1

- **Ambient light immunity**
  Effects from extraneous light are blocked through triangulation measurement via band-pass filter

- **VMT™ technology package**
  Simple commissioning with a technology package developed by VMT™ (available for all common robot control systems, such as ABB, Kuka—KRC and VKRC, Fanuc, etc.)

- **Calibration**
  Quick, fully automated, and reliable calibration methods for checking and replacing sensors

- **Speed**
  Efficient, single-step robot transformation correction

VMT™ Sense&Place
Flexibility for Joining Processes

Modern joining processes are complex. They require precise yet flexible automation technology. One of the most common applications is attaching doors and hoods during vehicle assembly.

Maintaining gap and flush tolerances is a hallmark of high product quality. Consistent quality can only be achieved when the joining process can be adapted to varying vehicle body tolerances.

VMT™ Sense & Place is an intelligent system that reacts to component variations and corrects the position of the robot so it can carry out installation steps perfectly.

Combined color-independent laser triangulation measurements create a stable and reliable multi-sensor system that is precisely adapted the task at hand.

Assembly methods such as centering the component position in the target area (best fit) or fixed zone orientation (alignment) are common uses for the system.

The modularity of the VMT™ Sense&Place system offers freedom to choose between various structures that range from stationary single-sensor systems to sensor arrays with optimized cycle times.

You decide how the system should be structured—flexible or highly adapted. The quality and precision of the solution are guaranteed either way.

In case of unplanned events, the integrated calibration process ensures that VMT™ Sense&Place systems are quickly and easily functional again and can even be continuously monitored during operation.

Benefit from our experience with countless applications, including installation of windshields, doors, hoods, and roofs.

Features & Technical Data

Features

- Flexible adaptation to objects
- ystem modularity
- Corrected gripping
- Position correction of object in the gripper
- Position adaptation during installation
- Averaging object tolerances
- Single-step assembly through robot correction
- VMT technology package
- No control response times
- Reusability
- Simple calibration

Technical data LR300		
General data	Measurement area	Xmin = 0 mm … 40 mm Xmax = 0 mm … 100 mm
Electric data		
Interface	Interface type	Ethernet over TCP/IP, 100 MBits/s
Input	Input voltage	24 V
	No. / type	3 digital inputs and external triggering
Output	No. / type	2 digital outputs
	Switch type	PNP
	Operational voltage	24 V
Ambient conditions	Ambient temperature	0 … 40 °C (32 … 104 °F)
	Storage temperature	-20 … 70 °C (-4 … 158 °F)
Mechanical data	Degree of protection	IP67
	Mass	ca. 500 g

Solution Excellence for Your Vision

VMT Vision Machine Technic Bildverarbeitungssysteme GmbH is your leading automation partner for machine vision turnkey solutions worldwide. VMT® develops and supplies customized machine vision, robot vision, and laser sensor systems for all industrial sectors using our self-developed state-of-the-art hardware and software products. As a professional consultant, VMT® provides objective solutions tailored to individual applications.

Our technical services cover the complete life cycle of your machine vision solution, including planning, commissioning, installation, and system integration as well as training, maintenance, and upgrade services. With more than 30 years of experience in industrial machine vision applications, you can be confident that VMT® will provide proven solutions for your operation that nobody else can match.