Leading the way.
Reinventing positioning.
Revolutionizing safety.

safePXV and **safe**PGV
SIL 3/PL e Absolute Positioning Systems

Your automation, our passion.

PEPPERL+FUCHS

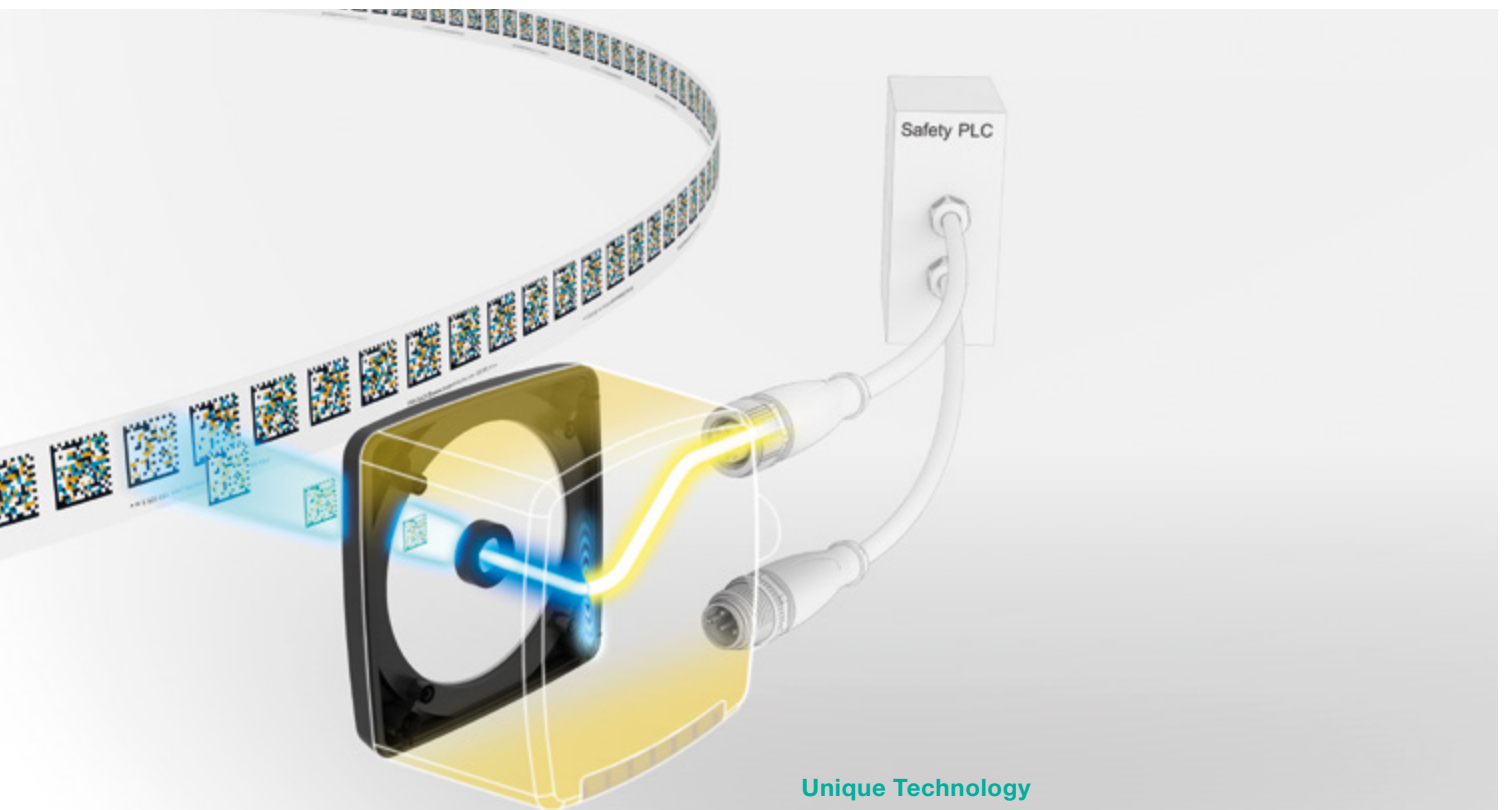# Unparalleled Safety: SIL 3/PL e Absolute Positioning with Just One Sensor

For the first time, **safe**PXV and **safe**PGV enable SIL 3/PL e-compliant safe absolute positioning with a single sensor. With this latest generation of positioning systems, Pepperl+Fuchs is presenting another pioneering solution in a long line of innovative products.

SIL 3/PL e without the Complexity

Safety applications have to meet strict requirements to protect personnel and equipment. Up to now, this has required expensive redundant systems. **safe**PXV and **safe**PGV are a new generation of positioning systems—they allow you to meet SIL 3/PL e requirements without the cost and complexity of traditional systems.

Safe and Efficient

SIL 3/PL e-compliant safe absolute positioning used to only be possible with multiple redundant systems. Plausibility checks had to be carried out in the safety PLC, and the entire system had to be inspected and certified. With the new **safe**PXV and **safe**PGV, a single sensor sends data that has already been rated as safe to the PLC. The result is an efficient system that complies with the highest safety standards.

Safety PLC

Unique Technology

This new safety technology is based on a combination of 2-D read head and multi-color Data Matrix code tape. Red and blue LEDs allow the different color codes to be read. But the real brains behind the positioning systems is the innovative sensor technology. Using a safe algorithm, the plausibility of all data is checked directly in the sensor before being relayed to the safety PLC. The data can then be processed in the PLC without additional plausibility checks—thanks to reliable, self-monitoring sensor technology.

Optimal functionality even when codes are contaminated or damaged

Reliable positioning even over gaps of up to 75 mm

Absolute Reliability with Data Matrix Code Tape

For years, Pepperl+Fuchs' absolute positioning systems have used the unique combination of a 2-D reader and Data Matrix code tape—a technology that ensures the utmost precision and reliability. Tried and tested in countless applications, the systems have been improved and optimized over the years.

The latest generation of positioning systems provides multiple redundancy with a larger 120 x 80 mm reading window. Not only is each individual code already redundant in terms of data, but the larger window can also read five Data Matrix codes simultaneously. This ensures optimal functionality even when codes are contaminated or damaged, making **safe**PGV and **safe**PXV the most reliable absolute positioning systems on the market.

Flexibility for Every Application

The large reading window and increased depth of focus ensure optimal readability and the highest tolerance for route guidance. Tight curves and slopes can be managed easily—as well as travel distances of up to 100,000 meters. Gaps in the code tape of up to 75 mm will not impact performance in any way. This is a key advantage for long routes or curves.
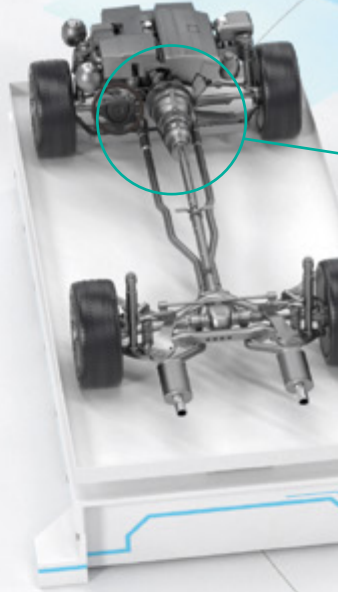
safePXV—Safe Positioning

Perfect for safe absolute positioning of monorail conveyors, for stacker cranes used in material handling, rotary tables, or for elevators and wind turbines.
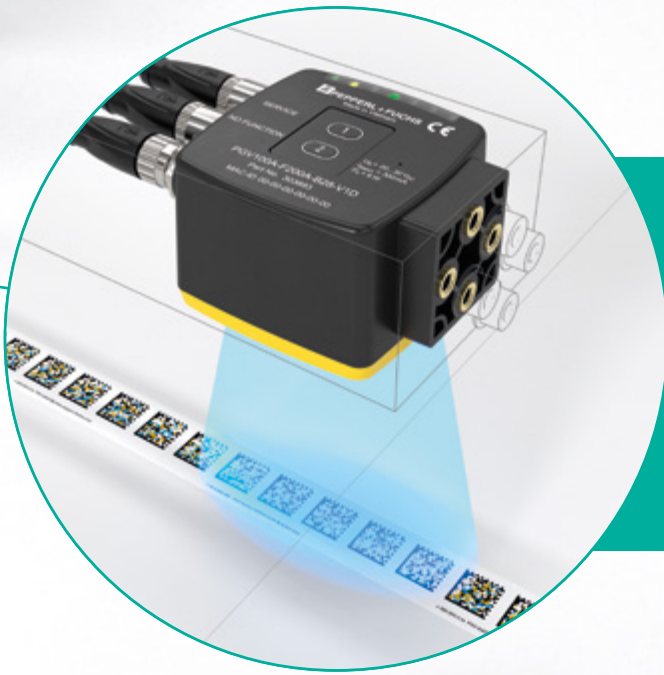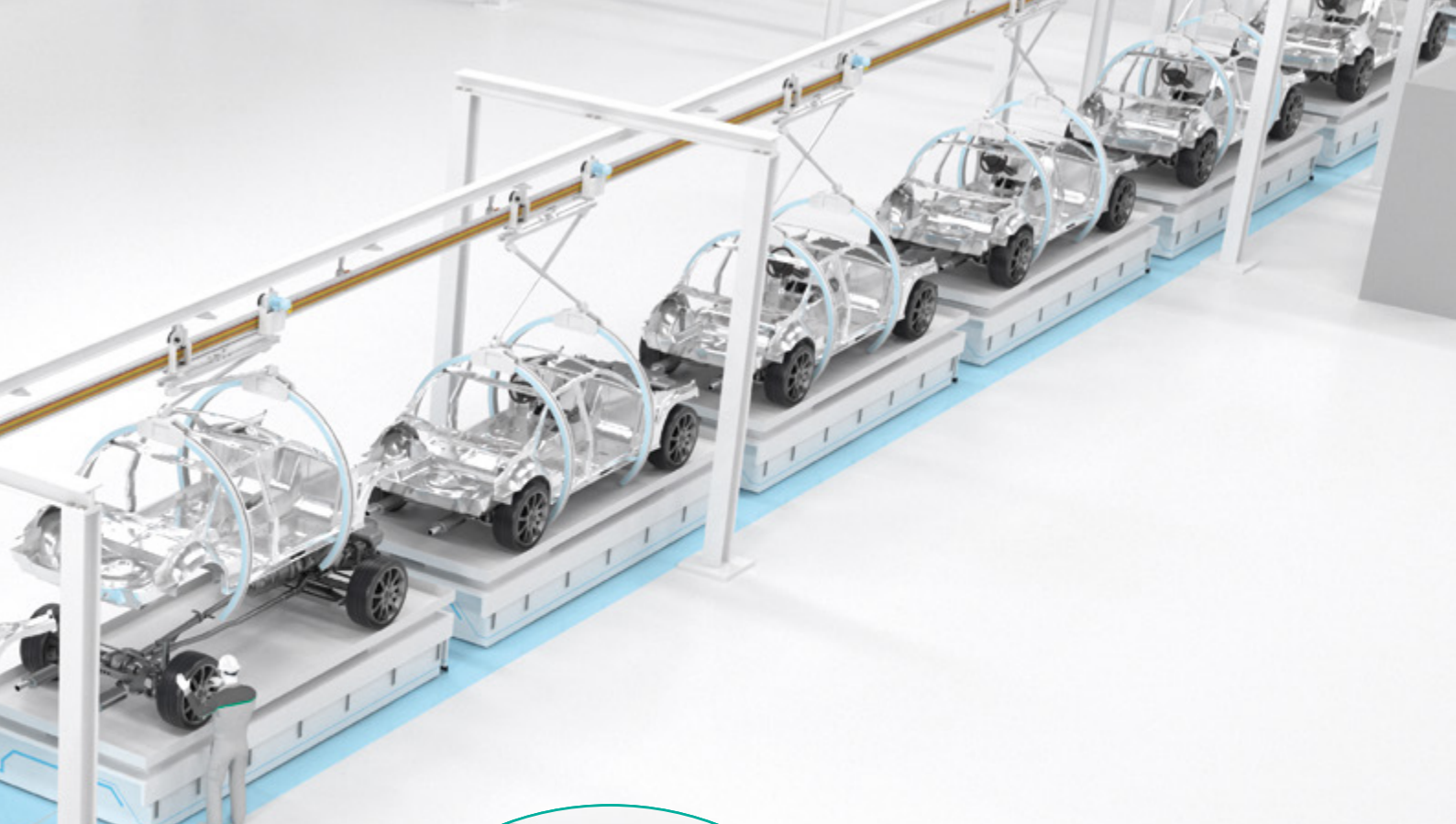
PEPPERL+FUCHS
Made in Vietnam

SERVICE
NO FUNCTION

1
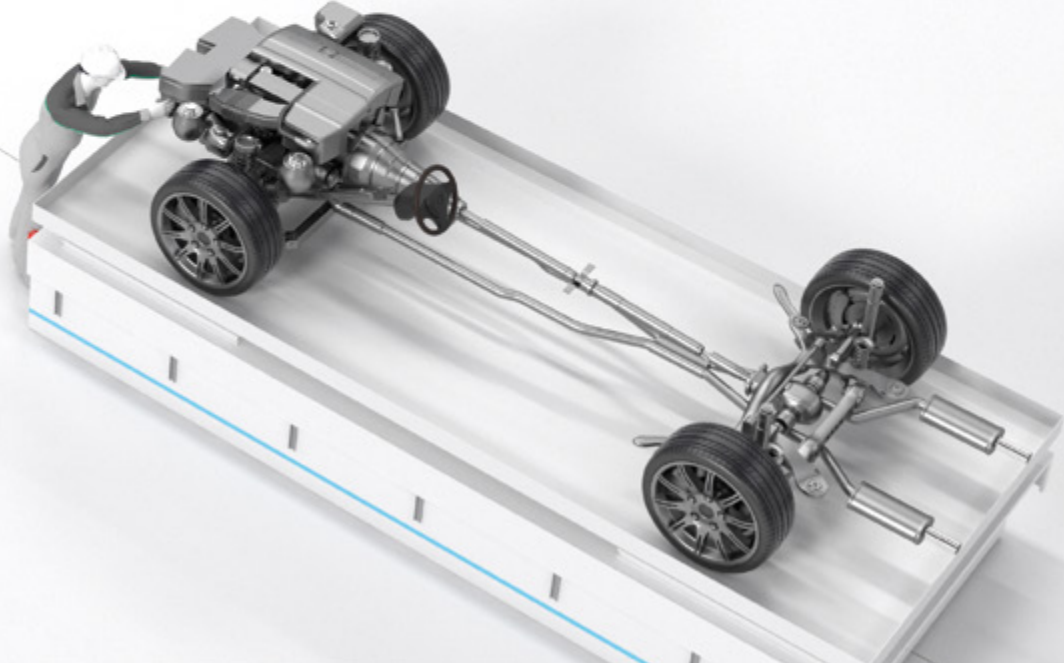2

$U_B = 20...30 V_{DC}$
$I_{max} = 300 mA$
$P_V = 6 W$

PXV100A-F200-B28-V1D
Part No. 296169
MAC-ID 00-00-00-00-00-00

safePGV—Safe Navigation

An ideal solution for navigating automated guided vehicles (AGVs) in material handling, delivery, and production. The system helps maintain a minimum distance between AGVs and ensures the safety of personnel.

Reliable and Easy to Use:
Safe Absolute Positioning with safePXV

The new **safe**PXV offers unparalleled reliability for linear absolute positioning.
But user-friendliness was also an important consideration during development.
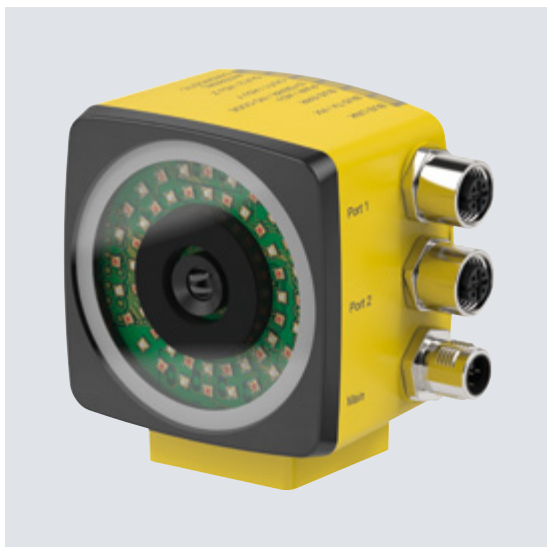The result is a system that is easy to assemble and operate.

Quick Setup

It is not just innovative technology that makes **safe**PXV stand out—another key advantage is its ease of use. Even system assembly is quick and straightforward. The code tape is delivered in the appropriate length and just has to be affixed. The read head can then be roughly aligned with the tape. Further parameterization is easily completed with a PROFINET-GSDML file via the safety PLC. A unique, easy-to-use system that offers maximum reliability during operation.

For more information, visit:
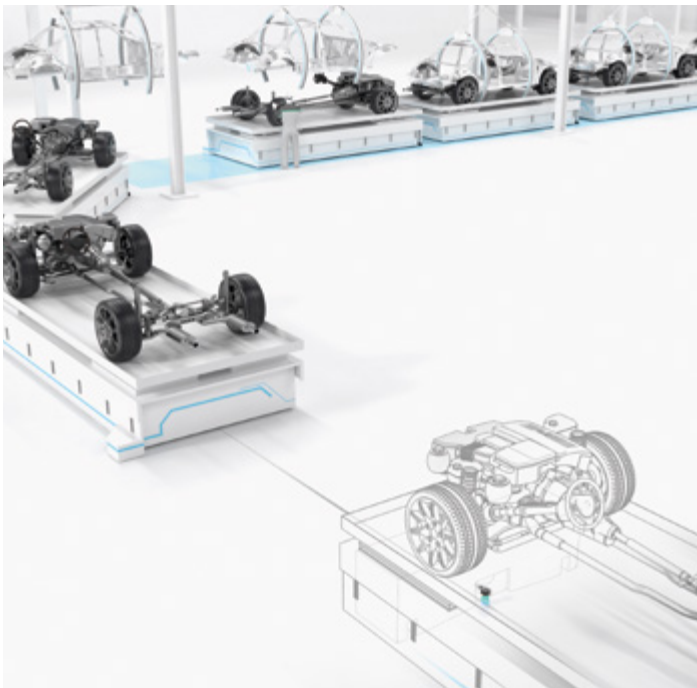**www.pepperl-fuchs.com/safe-positioning**

Key Benefits:

- The best and most reliable absolute positioning system in the world—built on a unique combination of 2-D camera and Data Matrix code tape

- Contact-free positioning up to 100,000 m

- Maximum positioning reliability: Multi-code redundancy provides resistance to contamination and damage

- Fast and flexible installation with adhesive code tape, a wide 120 x 80 mm reading window, and large depth of field

- Quick and easy parameterization via PROFINET PROFIsafe protocol

A Future-Proof Investment: Reliable AGV Navigation with safePGV

The new **safe**PGV has more to offer than just safe absolute positioning—it also provides all data needed to reliably control AGVs. This gives the user maximum flexibility when choosing navigation methods, which is precisely what makes the system an extremely safe investment for the future.

Equipped for All Control Options

With its innovative technology, the **safe**PGV is perfectly suited to navigating AGVs. In addition to absolute positioning, the sensor provides all data needed to reliably control AGVs. By transmitting the Y position and the angle, track deviations can be continuously corrected. The safe X position of the safety distance between the AGVs is also ensured at all times.

The vehicles are navigated using Data Matrix code tape. At any time, users can choose via a PROFINET-GSDML file which data to use—the protocol supplies all data at any time. This way, the **safe**PGV offers the ideal features for any situation.

For more information, visit:
www.pepperl-fuchs.com/safe-navigation

Key Benefits:

- Future-proof investment: flexible use of safe position and navigation data

- Safe and reliable navigation even with damaged Data Matrix codes due to large 120 x 80 mm reading window

- Compact housing for use in even the smallest AGVs

- Easy plug-and-play installation and commissioning

- PROFINET PROFIsafe protocol for flexible integration into any control panel

Your automation,
our passion.

Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- Remote I/O Systems
- FieldConnex® Fieldbus
- Electrical Explosion Protection Equipment
- Purge and Pressurization
- Industrial HMI
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity

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