Inspekto

The Fast Track to Automate Visual Inspection

One product – unlimited use-cases
Immediate to deploy, easy to set up, maintain and re-commission, self-optimized

SIEMENS

Inspekto – AI-Driven Visual Quality Inspection System

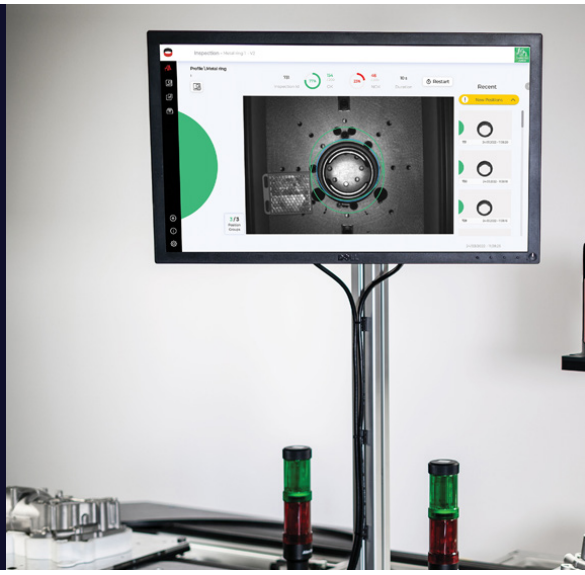
Provides dynamic AI guided optimization – no special expertise required

Defect Detection

No Prior Defect Definition or Training Required

Our AI engines recognize the characteristics of a good part and on this basis, deduce a defected part.

- The system can perform an industrial grade inspection based on very few good part samples
- Picks up on small defects that would be missed by the human eye
- Highly sensitive, the system enables identification of defects vs. permissible variations and in multiple regions of interest (ROIs)



Inspects a plenitude

of use cases and scenarios

- Inspekto system can inspect products and parts in various situations – as is!
- No need to tailor the system to the specific use case
- Suitable for a variety of industries, a wealth of manufacturing processes, different materials, inspected for different reasons and handled in a host of methods

Production Processes

- Plastic injection molding
- Metal casting
- Coating
- Mechanical assembly
- Material removal
- Incoming goods
- Packing & labeling

Inspection Types

- Assembly verification
- Surface verification
- Existence/absence of components
- Alignment of components
- Integrity of parts

Handling

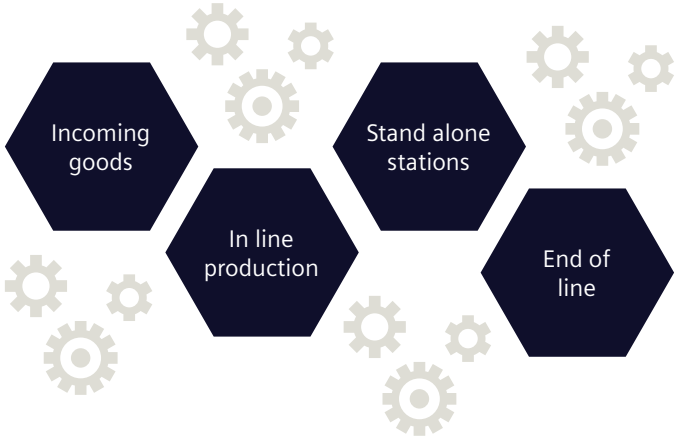
- Moving parts
- Stationary
- Robot/cobot integrated
- Manual

Object characteristics

- Single component,
- multi-materials or assemblies
- Reflective or diffusive, hybrid
- Transparent or opaque
- From small size CM parts to large >1 m ones

Gain continuous insights

The smart solution for your long-term visual inspection needs in varied deployment scenarios



Use one autonomous visual inspection system
for all key production line steps

- With its cutting-edge technology, Inspekto is an end-to-end AI-driven industrial visual quality inspection solution which offers an unprecedented use case versatility and ease of use
- Easily integrated into the production line, Inspekto is ready for immediate deployment and can also be used as a stand alone station
- Powered by the unique Autonomous Machine Vision-AI technology, Inspekto continuously ensures the inspection performance throughout the life cycle of the produced part

Making quality inspection EASY!

INSPEKTO
An all inclusive industrial QA product

High Performance
- Accurate & reliable
- Scalable
- Resilient

Immediate
- System ready to deploy
- Extremely quick set-up

Easy to use
- No machine vision or AI experise needed
- Low amount of simple production data
- Continuous optimization

Supported connectivity protocols
- Profinet
- Ethernet/IP
- TCP/IP
- PLC connectivity

Unique AI-based Technology
- User-friendly
- Built-in video guides for user success and independent use by non-experts

Affordable
- Low Total Cost of Ownership
- Minimal resources to deploy

Risk free
- Quick use case verification
- Reusable for future needs

Applicable
- Standardized product
- Wide range of inspection use-cases
- Many production processes

Harness Autonomous Machine vision

Ensure the Best Quality Inspection

Powered by 3 synergetic AI engines, Inspekto can easily inspect and make decisions autonomously for complex sequence scenarios with multiple inspection points.

Simplicity and Ease of Use Created by Multiple AI Engines

Acquisition AI Engine

Obtains the image

Recognition AI Engine

Identifies the part

Inspection AI Engine

Inspects for defects

1st AI Engine

Obtaining the Image – Acquisition

- Self set-up of all optics parameters per specific use case & scenario
- Self adjust mechanism during runtime dynamically mitigating changes in production
- Smartly selects the optimized image from the live stream for the recognition and inspection engines

2nd AI Engine

Identifying the Part – Recognition

- Recognizes and detects rigid objects of nearly any shape and surface
- One reference image is sufficient for detection
- Supports variations in location and rotation in the field of view (FOV)
- Can be self-triggered or can be triggered externally

3rd AI Engine

Finding the Defect – Inspection

- Semi-supervised, non-specific AI technology overcomes specific data scarcity and leverages generalization
- Requires a few good parts (OK)
- Defected (NOK) parts can be added for performance finetuning
- Understands product tolerances and physical attributes
- Differentiates between defects and permittable defects without any prior defect references or training
- Ongoing improvement via continuous deep-learning

Our system is designed with end user independence in mind using a do-it-yourself approach. No dedicated vision or AI know-how required.

Integrated optics and lighting optimization

- Now, you can inspect reflective parts accurately. Our patent pending anti-reflection (AR) technology eliminates self reflection and reflections from external sources
- Inspekto can inspect with or without AR in both stationary parts and parts in motion in production
- Flickering is eliminated, ensuring comfort and safety to nearby employees
- Real time, dynamic adjustments are performed autonomously to the full set of electro-optic parameters

Self supervised for selective sensitivity control

- Control the detection sensitivity of each defect type separately; can be initiated with good parts only
- Allows selective sensitivity – without crosstalk – maintaining the sensitivity levels on all regions of interest
- Inspekto is capable of selectively boosting the inspection sensitivity to a specific defect type, while maintaining general sensitivity to other types of defects

AI-driven optimization to mitigate changes in production

- The unique Inspekto technology adapts to the changes in your production line and to modifications of the produced parts
- The system analyzes your inspection requirements, offering performance optimizing AI-based recommendations for the best quality inspection

Receive immediate results and reporting

- Unlimited actionable inspection areas and regions of interest (ROIs)
- Unlimited number of detectable defects
- Unlimited inspection profiles can be supported on a single Inspekto[1]
- PLC reporting is provided per region of interest (ROI) for maximum accuracy

1 Per purchased license

Inspekto delivers immediate and agile automated visual inspection with simple setup as well as ease of use in continuous adaptation, recommissioning and operation

Exceeding performance

Overcoming your inspection challenges

Inspekto more than just machine vision AI
Inspekto delivers an end-to-end solution

	Inspekto	Other machine vision with AI
AI scope	End to end from image capture through part recognition and defect detection to real time reporting	Defect inspection only
Image capturing	Dynamically adjusts the electro optics systems to acquire the best image	Image acquisition is pre-set and not dynamic
Part recognition	Automatic independent recognition; doesn't require trigerring	Extemal trigger
Inspection	Small amount of OK images Specific defect sensitivity	Requires many OK & NOK samples for each defect type
Easy to use, maintain & recommission	No on-site training process, no expert required, requires low amount of data	Complex expert dependet on-site/cloud AI training, requires rule-based programming for full solution pattern matching
Lifecycle performance control	Autonomous performance optimization by active recommendations engine	Periodical, reactive expert dependent complex maintenance with re-training

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