SOLUCIONES EFICIENTES PARA EL SECTOR ALIMENTACIÓN

SICK
Sensor Intelligence.

Luis Fachal

Delegado Comercial, SICK Optic-Electronic, S.A.

23 May 2018

INDUSTRIE 4.0 READY®

¿QUIÉNES SOMOS?

- Empresa multinacional con sede central en Waldkirch (Selva Negra, Alemania)
- Fundada en 1946 – más de 70 años de tecnología de detección
- Alrededor de 8.000 empleados en todo el mundo
- Presente en 90 países: Con 50 subsidiarias e inversiones de capital y numerosos organismos especializados
- La más amplia gama de productos y tecnología en la industria de sensores
- Líder en innovación en tecnología de detección
- Filial propia en España y Portugal desde 1990
- 60 empleados, 10 delegaciones y una amplia red de distribución

CERCA DE SU SECTOR

SICK
Sensor Intelligence.

FACTORY AUTOMATION | LOGISTICS AUTOMATION | PROCESS AUTOMATION

SICK
Sensor Intelligence.

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GAMA DE PRODUCTOS + EXPERIENCIA =
LA SOLUCIÓN ADECUADA

SICK
Sensor Intelligence.

- Analizadores de Gases
- Medición de Polvo
- Protección Optoelectrónica
- Encoders
- Fotocélulas
- Interruptores de Seguridad
- Medición de Caudal
- Rejillas Fotoeléctricas
- Relés de Seguridad
- Sensores de Distancia
- Sensores de Fluidos
- Sensores de Proximidad
- Sensores de Registro
- Sensores de Tráfico
- Sensores Magnéticos
- Motorfeedback
- Identificación Automática
- Detección
- Sistemas
- Visión

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SU BENIFICIO

- ✓ Soluciones sencillas
- ✓ Servicios profesionales
- ✓ Soluciones eficientes
- ✓ Instalación a tiempo
- ✓ Orientación al cliente
- ✓ Alto rendimiento
- ✓ Inversión segura
- ✓ Contacto local

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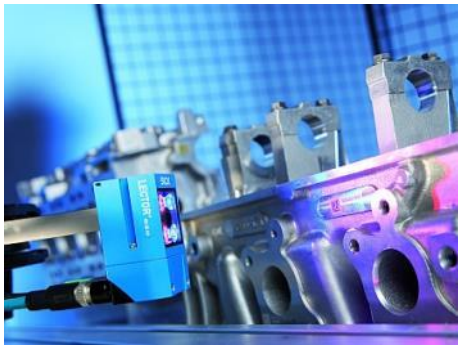
SOLUCIONES PERSONALIZADAS

DETECCIÓN

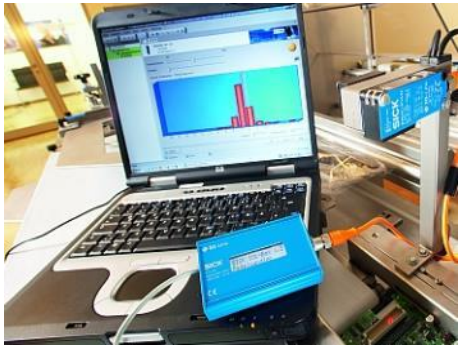
MEDICIÓN

PROTECCIÓN



IDENTIFICACIÓN

POSICIONAMIENTO



NETWORKING / INTEGRACIÓN

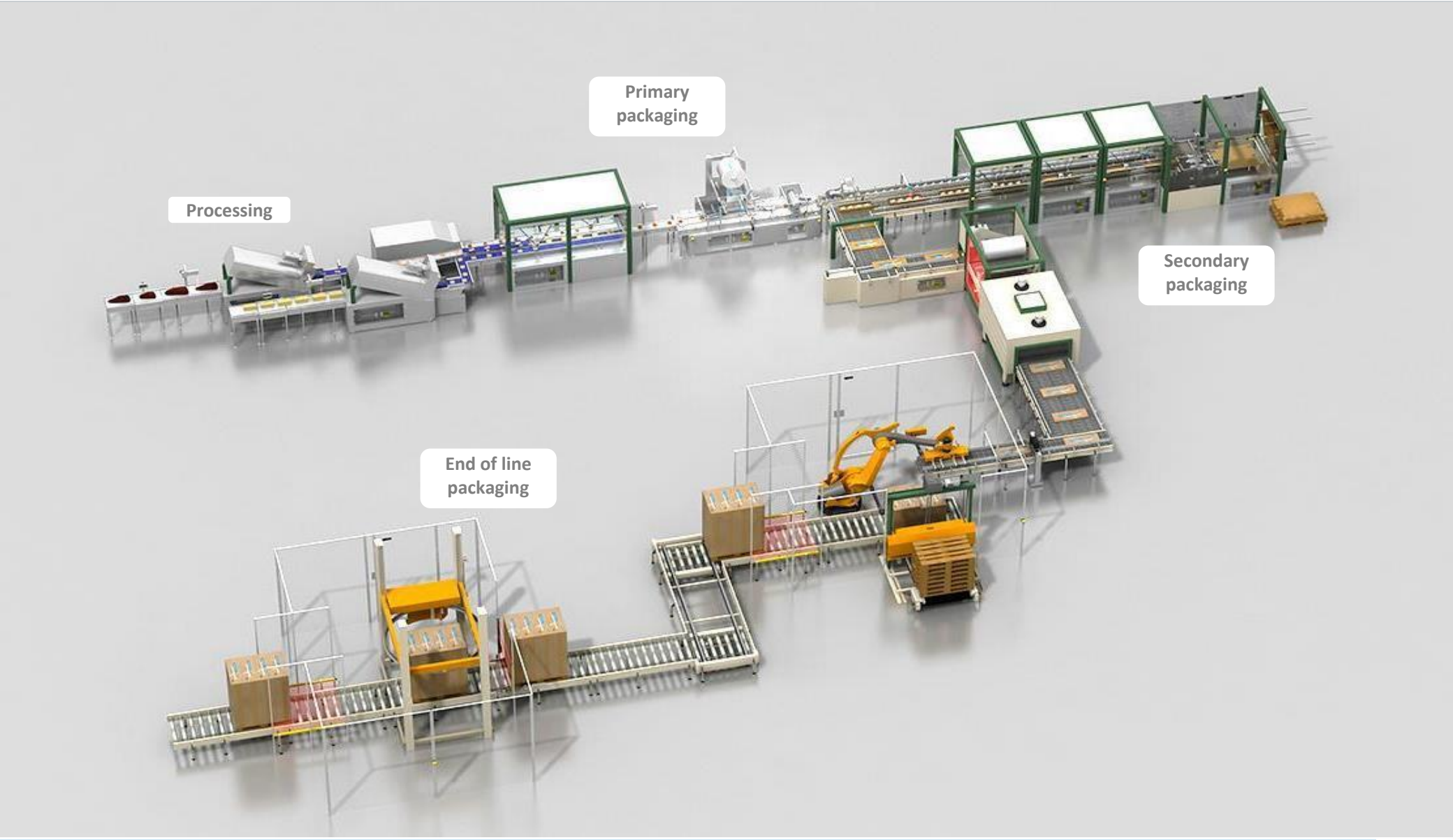
SUPERVISIÓN Y CONTROL

SERVICIOS

SICK
Sensor Intelligence.

SICK competences in the Food Industry

EFFICIENT SOLUTIONS FOR THE FOOD INDUSTRY
OVERVIEW



EFFICIENT SOLUTIONS SOLVING INDUSTRY CHALLENGES

SICK
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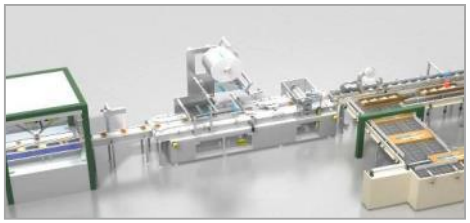
Flexible Automation

Presence Detection & Measurement

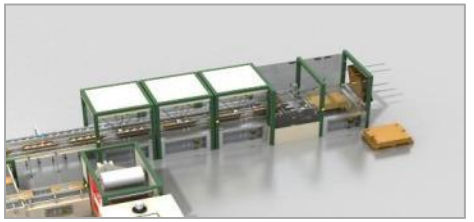


Safety

Access Guarding & Area Guarding

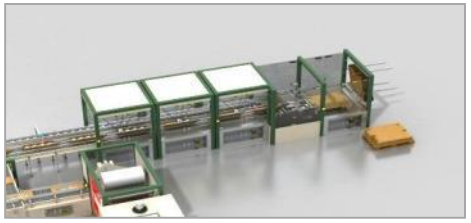
Quality Control

Inspection & Verification



Track & Trace

Data Management & Identification



CHALLENGES IN THE FOOD INDUSTRY
PRIMARY PACKAGING

SICK
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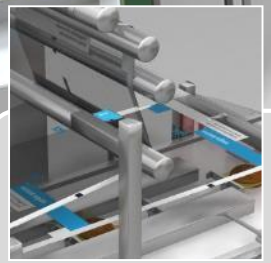
Flexible Automation
Presence Detection & Measurement

Verification of volume, shape and dimension
Smart camera: IVC3D

Tension Control
Inductive proximity sensor: IMF



Edge detection and guidance
Array sensor: AT20

Flexible “Print mark” detection
Contrast sensor: KT5

PRODUCTS FOR FLEXIBLE AUTOMATION

- **Smart camera**
  - The IVC-3D makes advanced 3D shape inspections easy, enabling cost-efficient solutions
  - Contrast-independent measurement provides greater reliability even at varying object color and when the object color is the same as the background

  Recommended Product IVC-3D

- **Array sensor**
  - No teach, program or menu activities make setup virtually hassle free
  - Cost-effective solution to reliably determine edge position
  - Easy-to-integrate, compact housing can be mounted over the web so less downtime is required for maintenance

  Recommended Product AT20

- **Contrast sensor**
  - All print marks and color combinations are reliably detected, ensuring high machine throughput
  - Reliable operation, even with jittering webs and high-gloss materials
  - High positioning accuracy improves packaging quality

  Recommended Product KT5

- **Inductive proximity sensor**
  - Extended temperature range (-40 to +80 °C). Tolerates short-term temperature increases up to 100 °C
  - Hygienic process due to FDA approved material and hygienic design
  - Reduced maintenance costs due to sensor's resistance to aggressive cleaning cycles

  Recommended Product IMF

CHALLENGES IN THE FOOD INDUSTRY
END OF LINE PACKAGING

SICK
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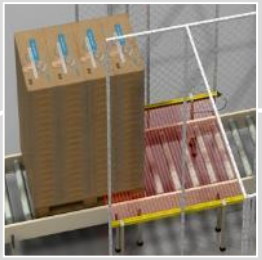
Safety
Access Guarding & Area Guarding

Safe control solution
Safety controller: Flexi Soft



Access protection with pallet detection
Safety light curtain: C4000 Palletizer

Access protection with muting
Safety light curtain: M4000 Standard

Enabling and safe locking
Safety switch: i10 Lock

PRODUCTS FOR SAFETY

- **Safety light curtain**
  - Cost-effective light curtains with standard and advanced functionalities
  - Maximum access protection in automated material transport applications ensures the system reliably differentiates between people and material
  - Easy integration and quick commissioning save time and costs since secondary sensors are not required

  Recommended Product C4000 Palletizer / M4000 Standard

- **Safety controller**
  - Only one configuration for the complete system, simplifying commissioning
  - Rich diagnostic functions available via Fieldbus gateway module
  - Less downtimes due to gateways, e.g., Profinet I/O, Profibus-DP, EtherCAT, CANopen, Modbus TCP, EtherNet (TCP/IP)

  Recommend Product FlexiSoft

- **Safety locking device**
  - Small design simplifies installation and makes it easy to mount directly on the guard door frame
  - Flexible electrical connectivity due to three cable entry glands
  - Practical, simple adjustment due to various actuators that are suitable for any door

  Recommended Product i10 Lock

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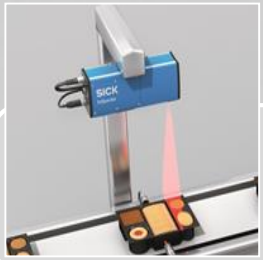
CHALLENGES IN THE FOOD INDUSTRY
SECONDARY PACKAGING

SICK
Sensor Intelligence.

Quality Control
Inspection & Verification



Verifying completeness of cases
Laser measurement technology: TriSpector

Data verification of packaging material
Vision sensor: Inspector PI50

PRODUCTS FOR QUALITY CONTROL

- **Intuitive 3D inspection**
  - 3D inspection of moving parts
  - Factory calibrated 3D data, true mm values in all dimensions
  - Rugged IP67 metal housing with plastic windows
  - Quick device replacement due to guaranteed field of view and re-use of saved settings
  - Embedded image analysis for fast configuration

  Recommended Product TriSpector

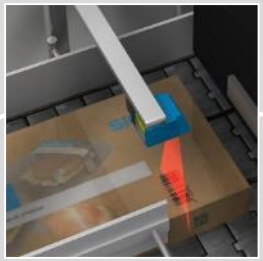
- **Vision sensor**
  - Powerful yet simple tools enable flexibility in various positioning and inspection applications
  - Device cloning saves time in deployment using only standard web browser
  - Web interface enables import/export of unlimited number of reference objects, increasing production flexibility
  - Ethernet communication and web API gives excellent connectivity and freedom to customize user's HMI

  Recommended Product Inspector

CHALLENGES IN THE FOOD INDUSTRY
SECONDARY PACKAGING

SICK
Sensor Intelligence.

Track & Trace
Data Management & Identification



Verifying a bar code
Bar code scanner: CLV620

Pallet tracking
RFID: RFH63x

PRODUCTS FOR TRACK & TRACE

- **RFID technology**
  - Intelligent technology allows stand-alone usage
  - Highest reading/writing performance with flexible integration in common industrial fieldbuses via IDpro compatibility
  - Less maintenance time due to an integrated cloning back-up system using microSD
  - Easily adapts to application requirements via SOPAS parameter setting tool

  Recommended Product Interrogator (write/read unit) RFH63x

- **Bar code scanner**
  - Easy to configure with standard, long-range and high-density versions available
  - Accurate code identification even at high speeds
  - Easily integrated into a variety of networks, providing flexibility
  - A variety of diagnostic options ensures easy access for configuration and troubleshooting

  Recommended Product CLV620

- **Hand-held scanner**
  - Large depth of field and reading distances of up to 600 mm
  - Identification of codes with 0.076 mm module width
  - Fast and reliable decoding even on poorly printed or partly damaged codes
  - Increased productivity thanks to high scan rate

  Recommended Product IDM140

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TOP PRODUCTS FOR THE FOOD INDUSTRY

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WL12-3

Rugged metal housing with dovetail attachment: WL12-3

PBS

The smart solution: PBS Electronic pressure switch with display

W4S-3 Hygienic

For applications under hygienic requirements: W4S-3 Hygienic

IMF

For applications in wash down environment: Inductive sensor IMF

IVC3D

Advanced 3D inspection for harsh environments: IVC-3D stainless steel

JEF300

Reliable indoor laser measurement technology: JEF300

Flexi Soft

Simple and easy to use: Flexi Soft safety controller

C4000

Multifunctional and user friendly: C4000

S300 Mini

Safety first: S300 Mini safety laser scanner

LECTOR®620

LECTOR®620: Clever. Simple. Industrial.

CLV62x

Excellent reading performance: CLV62x

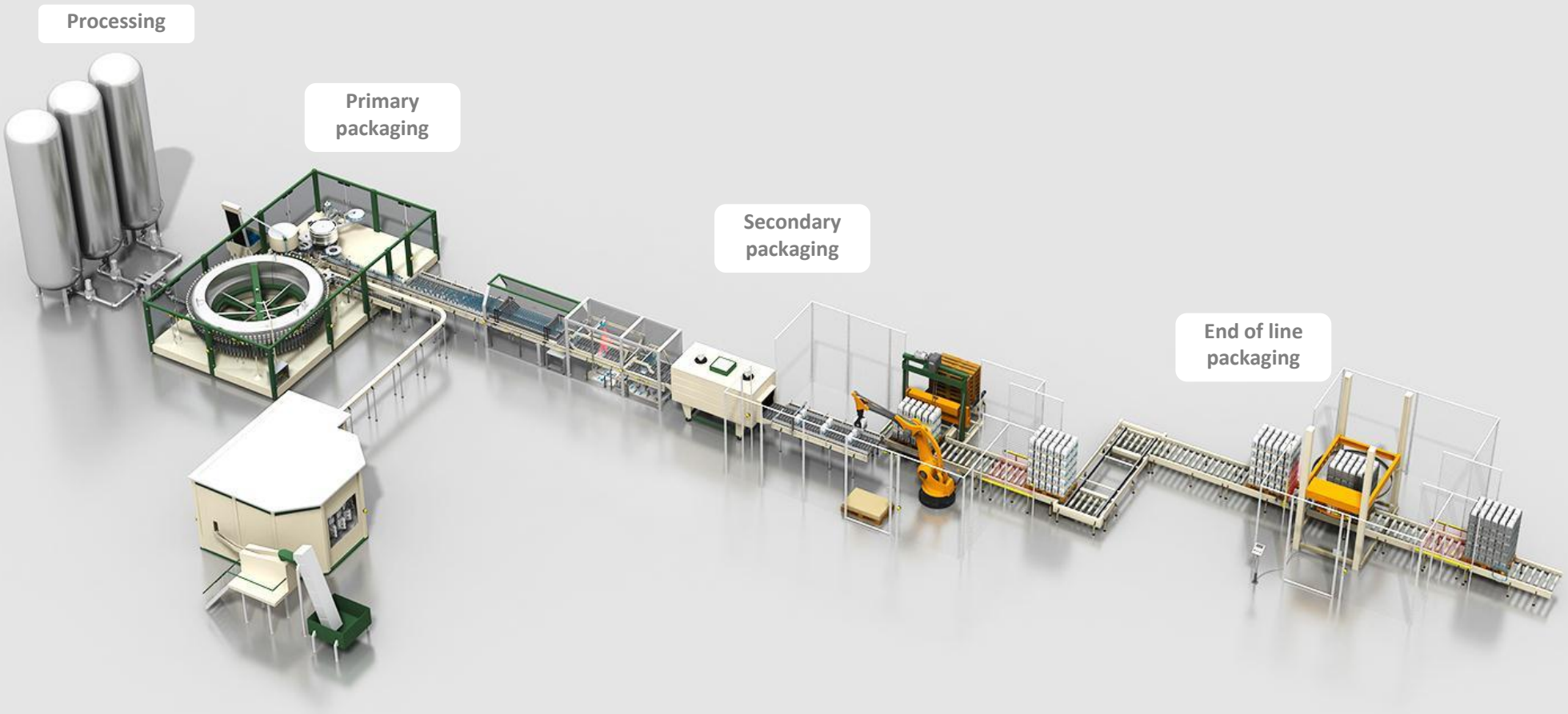
Inspector PI50

Inspector PI50: Part inspection made easy

SICK
Sensor Intelligence.

SICK competences in the Beverage Industry

EFFICIENT SOLUTIONS FOR THE BEVERAGE INDUSTRY
OVERVIEW



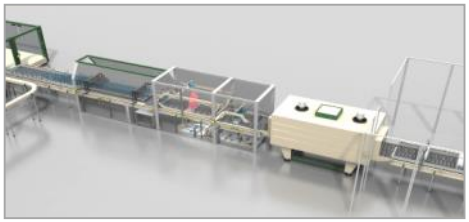
EFFICIENT SOLUTIONS SOLVING INDUSTRY CHALLENGES

Flexible Automation

Presence Detection & Measurement

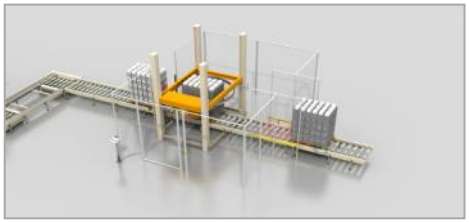
Safety

Access Guarding & Area Guarding



Quality Control

Inspection & Verification

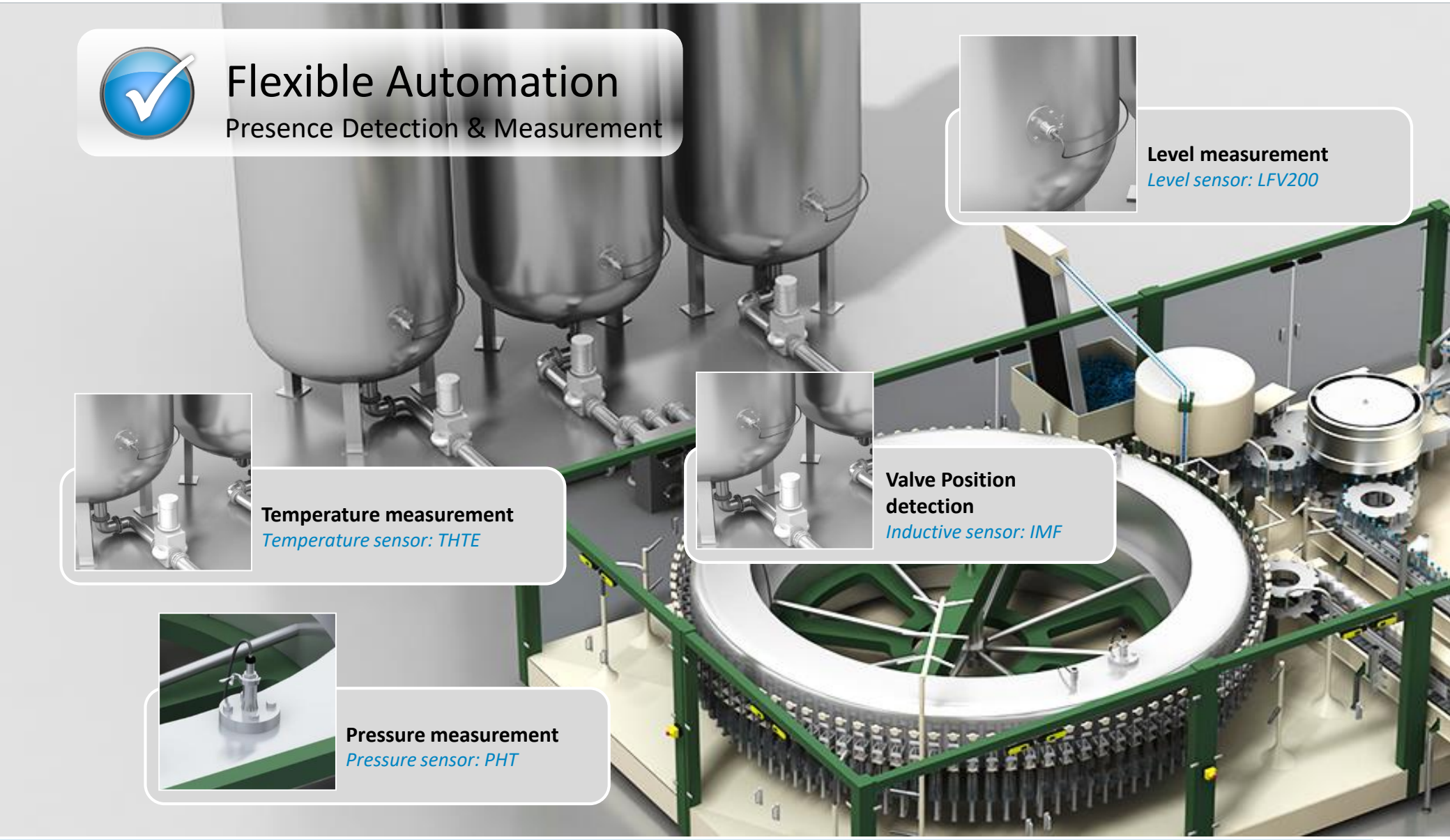


Track & Trace

Data Management & Identification

CHALLENGES IN THE BEVERAGE INDUSTRY
PROCESSING

SICK
Sensor Intelligence.



Flexible Automation
Presence Detection & Measurement

Level measurement
Level sensor: LFV200

Temperature measurement
Temperature sensor: THTE

Valve Position detection
Inductive sensor: IMF

Pressure measurement
Pressure sensor: PHT

PRODUCTS FOR FLEXIBLE AUTOMATION

- **Temperature sensor**
  - The sensor can be exchanged without interrupting the process, providing high equipment availability and minimizing hygienic risks
  - Safe hygienic operation: Wetted parts are made from high-grade stainless steel, hygienically-graded surface finish, and a gap- and crevice-free design

  Recommended Product THTE

- **Pressure sensor**
  - Perfectly suited for demanding hygienic applications
  - Safe hygienic operation through EHEDG and 3-A certifications
  - High reliability due to robust design and use of high-grade materials

  Recommended Product PHT

- **Level sensor**
  - Universal technology works in all kinds of liquids
  - Flexible and robust system for a multitude of applications
  - Easy operation and integration, saves time
  - Maintenance-free sensor, reduces downtime

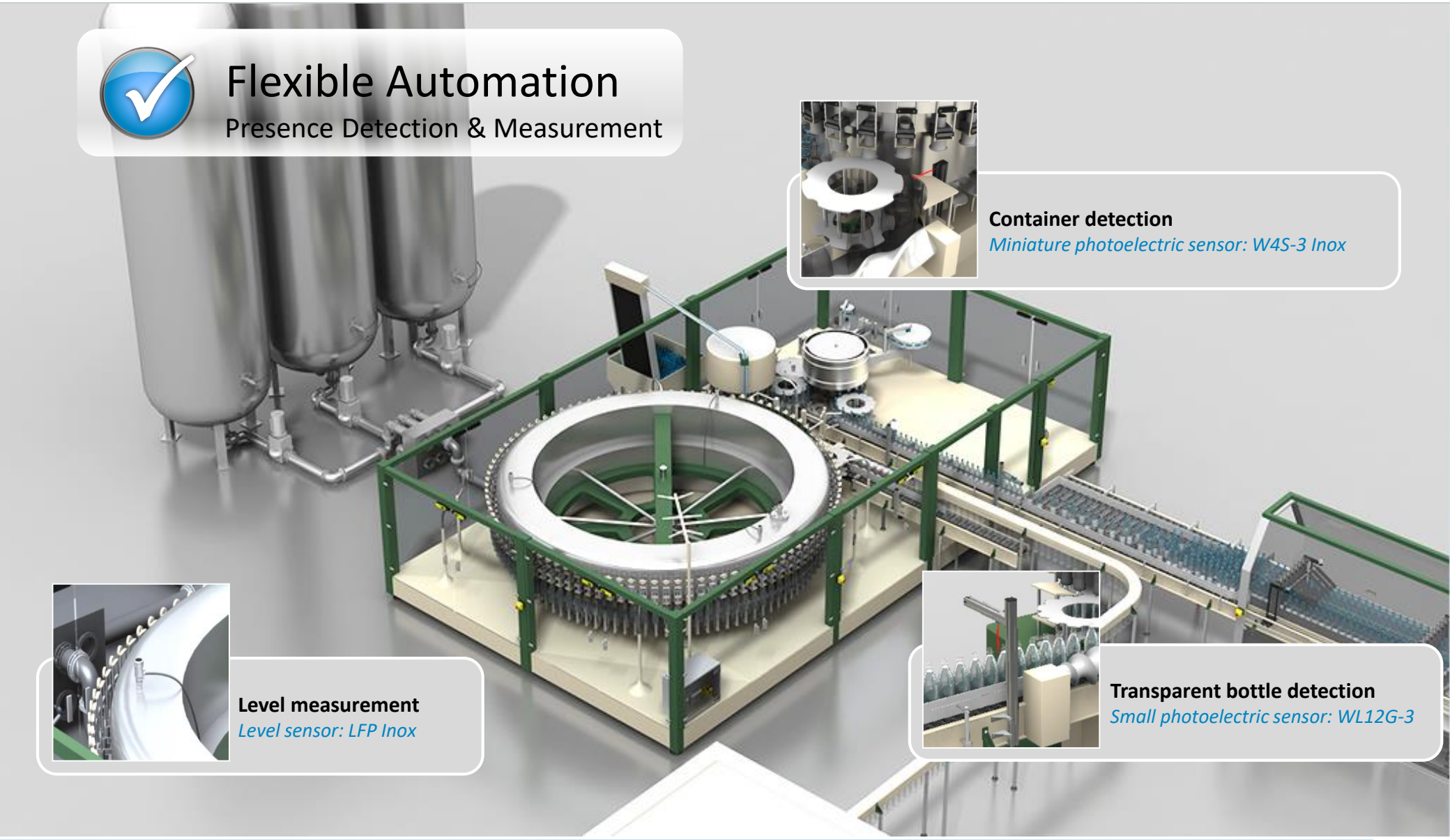
  Recommended Product LFV200

- **Inductive proximity sensor**
  - Extended temperature range (-40 to +80 °C). Tolerates short-term temperature increases up to 100 °C
  - Hygienic process due to FDA approved material and hygienic design
  - Reduced maintenance costs due to sensor's resistance to aggressive cleaning cycles

  Recommended Product IMF

CHALLENGES IN THE BEVERAGE INDUSTRY
PRIMARY PACKAGING

SICK
Sensor Intelligence.



Flexible Automation
Presence Detection & Measurement

Container detection
Miniature photoelectric sensor: W4S-3 Inox

Level measurement
Level sensor: LFP Inox

Transparent bottle detection
Small photoelectric sensor: WL12G-3

PRODUCTS FOR FLEXIBLE AUTOMATION

- **Level sensor**
  - Robust design increases service life
  - High flexibility due to cutable probe and interchangeable connection concept
  - Cost savings due to multiple output signals: one system for both level detection and continuous level monitoring
  - Time and cost savings due to low maintenance and quick commissioning

  Recommended Product LFP Inox

- **Miniature photoelectric sensor**
  - Hygienic housing and accessories with no grooves or crevices eliminates the potential for bacteria to grow, providing a more hygienic solution
  - Long service life in harsh conditions ensures less downtime and fewer replacement costs
  - Reliable detection of all transparent objects
  - Quick and easy alignment due to highly visible PinPoint emitter LED

  Recommended Product W4S-3 Inox

- **Small photoelectric sensor**
  - Reliable detection of transparent objects, including PET bottles and transparent films
  - PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment
  - High immunity to optical interference reduces false readings

  Recommended Product WL12G-3

CHALLENGES IN THE BEVERAGE INDUSTRY
END OF LINE PACKAGING

SICK
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Safety
Flexible Control Solution

Access protection with muting
Safety light curtain: M4000 Standard

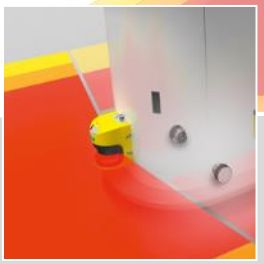
Enabling and safe locking
Safety switch: i10 Lock

Emergency stop
Safety switch: ES21

Safety

Flexible Control Solution

Access protection with muting
Safety light curtain: M4000



Collision prevention
Safety laser scanner: S3000

Safe control solution
Safety controller: Flexi Soft

PRODUCTS FOR SAFETY

- **Safety laser scanner**
  - Largest protective field range on the market
  - Safety engineering - with no loss of productivity.
  - Easy installation, commissioning and maintenance for stationary and mobile applications

  Recommended Product S3000

- **Safety light curtains**
  - Maximum access protection in automated material transport applications ensures the system reliably differentiates between people and material
  - Easy integration and quick commissioning save time and costs since secondary sensors are not required

  Recommended Products C4000 & M4000

- **Safety controller**
  - Only one configuration for the complete system, simplifying commissioning
  - Rich diagnostic functions available via Fieldbus gateway module
  - Less downtimes due to gateways, e.g. Profinet I/O, Profibus-DP, EtherCAT, CANopen, Modbus TCP, EtherNet (TCP/IP)

  Recommended Product FlexiSoft

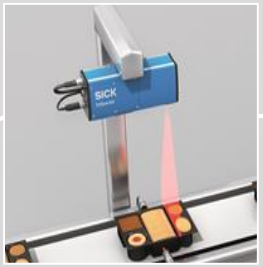
- **Safety switches**
  - Small design simplifies installation and makes it easy to mount directly on the guard door frame
  - Flexible electrical connectivity due to three cable entry glands
  - Practical, simple adjustment due to various actuators that are suitable for any door

  Recommended Products RE27 & ES21

CHALLENGES IN THE BEVERAGE INDUSTRY
SECONDARY PACKAGING

SICK
Sensor Intelligence.

Quality Control
Inspection & Verification



Verifying completeness of cases
Laser measurement technology: TriSpector

Quality check of bottle caps
Vision sensor: Inspector

Bottle detection
Compact photoelectric sensor: WTB27-3 MultiPac

PRODUCTS FOR QUALITY CONTROL

- **Intuitive 3D inspection**
  - 3D inspection of moving parts
  - Factory calibrated 3D data, true mm values in all dimensions
  - Rugged IP67 metal housing with plastic windows
  - Quick device replacement due to guaranteed field of view and re-use of saved settings
  - Embedded image analysis for fast configuration

  Recommended Product TriSpector

- **Vision sensor**
  - Unique UV illumination provides a quick return on investment in solar cell manufacturing by detecting edge defects on blue wafers
  - The advanced “object locator” locates parts independent of position, rotation and scale and guarantees high-quality results
  - Configurable outputs by logical expression reduces cost of additional logical equipment in your production

  Recommended Product Inspector

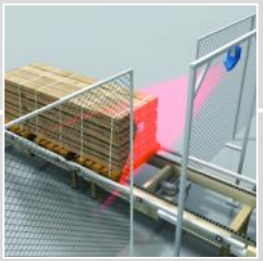
- **Small photoelectric sensor**
  - Reliable detection of transparent objects, including PET bottles and transparent film
  - PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment

  Recommended Product WTB27-3

CHALLENGES IN THE BEVERAGE INDUSTRY
END OF LINE PACKAGING

SICK
Sensor Intelligence.

Track & Trace
Data Management & Identification



Bar code reading
Bar code scanner: CLV62x

Pallet tracking
RFID: RFH63x

Product identification
Hand-held scanner: IDM140

PRODUCTS FOR TRACK & TRACE

- **RFID technology**
  - Intelligent technology allows stand-alone usage
  - Highest reading/writing performance with flexible integration in common industrial fieldbuses via IDpro compatibility
  - Less maintenance time due to an integrated cloning back-up system using microSD
  - Easily adapts to application requirements via SOPAS parameter setting tool

  Recommended Product Interrogator (write/read unit) RFH63x

- **Bar code scanner**
  - Easy to configure with standard, long-range and high-density versions available
  - Accurate code identification even at high speeds
  - Easily integrated into a variety of networks, providing flexibility
  - A variety of diagnostic options ensures easy access for configuration and troubleshooting

  Recommended Product CLV62x

- **Hand-held scanner**
  - Large depth of field and reading distances of up to 600 mm
  - Identification of codes with 0.076 mm module width
  - Fast and reliable decoding even on poorly printed or partly damaged codes
  - Increased productivity thanks to high scan rate

  Recommended Product IDM140

TOP PRODUCTS FOR THE BEVERAGE INDUSTRY

SICK
Sensor Intelligence.

W4S-3 Glass

W4S-3 Glass: Best in class performance in stainless steel

ML20

Running markless for stability and design freedom: ML20 Ethernet (TCP/IP)

WTB27-3 MultiPac

Reliable detection with WTB27-3 MultiPac photoelectric proximity sensor:

THTE

Hygienic and flexible: Temperature sensor THTE with protection tube

LFP Inox

LFP Inox: Robust design increases service life

PHT

PHT: Perfectly suited for demanding hygienic applications

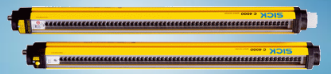
S300 mini

Safety first: Safety laser scanner S300 mini

Flexi Soft

Simple and easy to use: Safety controller Flexi Soft

C4000



Multifunctional and user friendly: C4000

Inspector PI50

Inspector PI50: Part inspection made easy

LECTOR®620

LECTOR®620: All you can read

CLV62x

Excellent reading performance CLV62x

INDUSTRIA 4.0
DEFINICIÓN

"La Industria 4.0 es la digitalización de procesos de producción, con el fin de flexibilizarlos e incrementar la eficiencia."

Bernhard Müller, Director de Industria 4.0, Grupo SICK

SENSOR INTELLIGENCE FOR INDUSTRY 4.0
VISION SMART FACTORY

SICK
Sensor Intelligence.

Pred. Maintainance

Intelligent Sensors

Track And Trace

Identification Solutions

customization/
lot size 1

consequent
transparent
production

Minimize resources
(Quality control)

Human Robot
collaboration

dynamic &
flexible production

High
reliabilty

I4.0

Flexible Automation

Intelligent camera

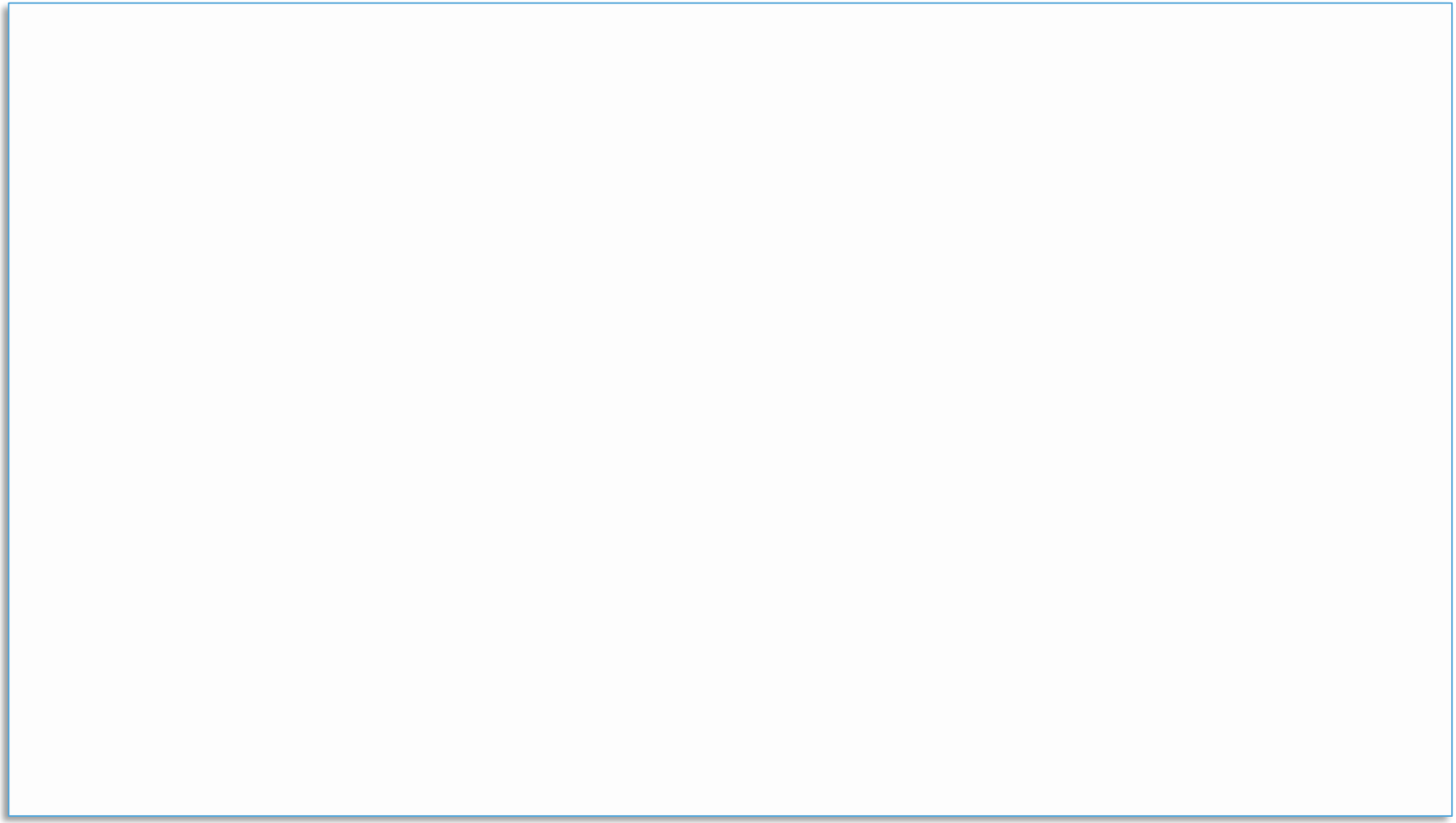
Safety

Safety Solutions

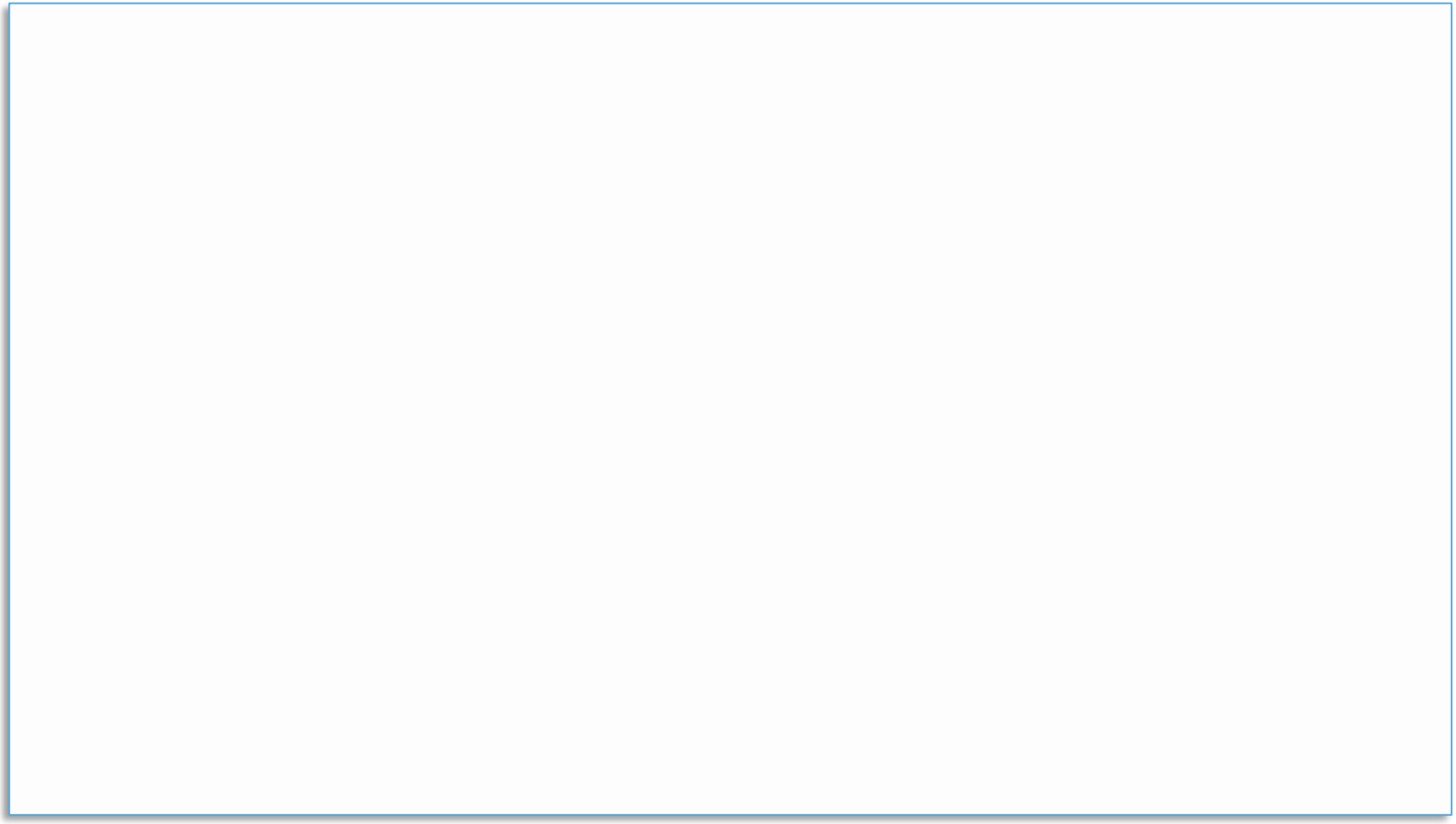
Quality Control

2D / 3D Vision

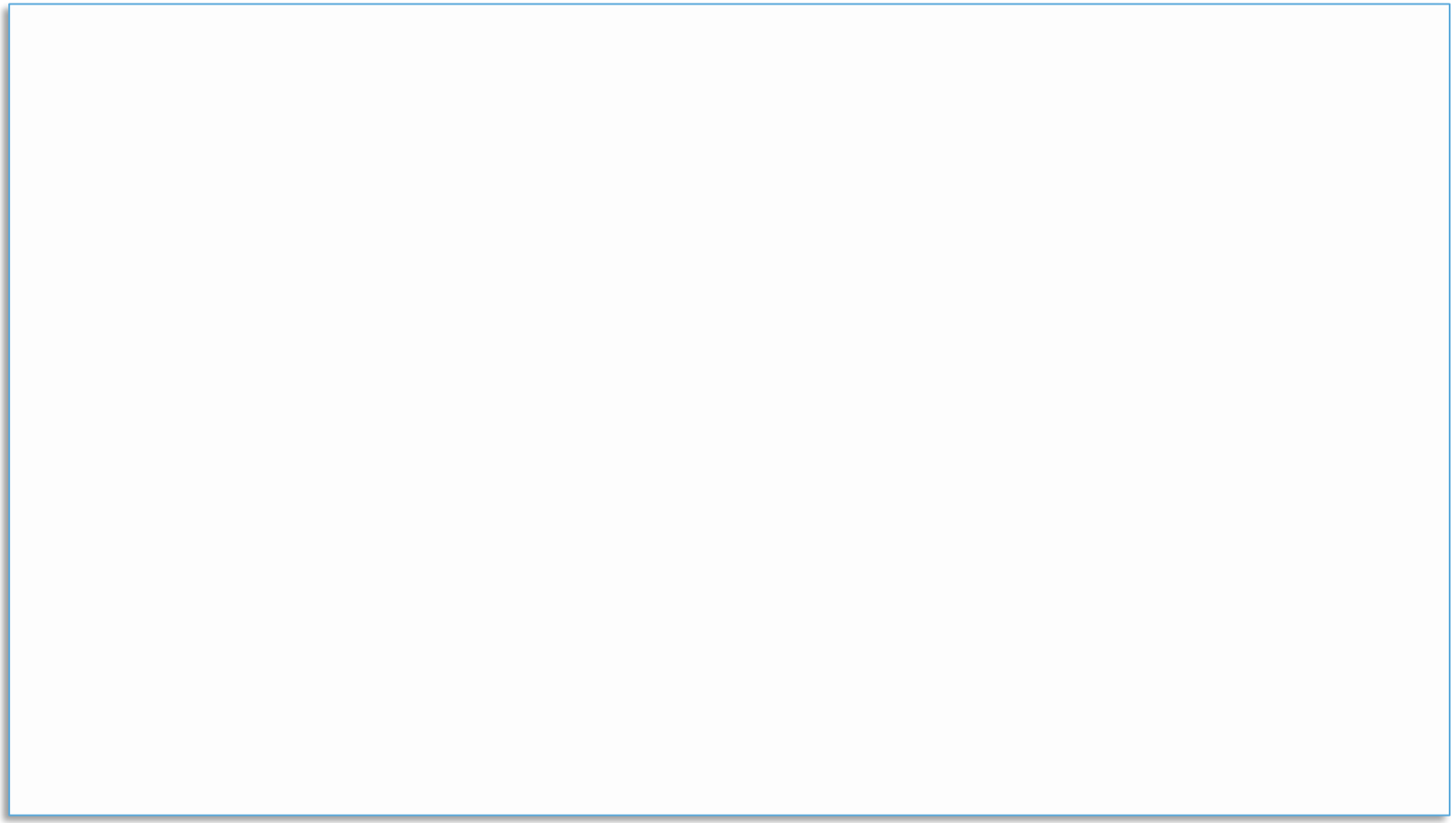
VIDEOS
INSPECCIÓN DE JARRAS DE MERMELADA



VIDEOS
SOLUCIONES DE INSPECCIÓN E IDENTIFICACIÓN



VIDEOS
MEDICIÓN DE NIVELES EN DEPÓSITOS PARA LÍQUIDOS Y SÓLIDOS



THANK YOU FOR YOUR ATTENTION.