RapCo
Rapid Change Over

Automating product changeover
in production facilities

SENSORS INCORPORATED

SICK
Sensor Intelligence.

RapCo – Rapid Change Over

RapCo is an automated solution that can be used in any application where hand wheels, mechanical stops, valves, and sensors would normally need to be operated and configured manually in order to change over products in a production facility.

With the RapCo system: Hand wheels and mechanical stops are replaced with sensors, drives, and linear units.

RapCo makes production more efficient

The need for fast and flexible production facilities is growing, as on-demand production means producing only the amount that is actually required or has already been paid for. It is also a production method that keeps storage costs down. From a marketing and sales perspective, customized packaging is growing in importance too: Packaging will often vary from one destination country to the next according to the size or quantity of the products, or how they smell.

This results in frequent product changeovers and smaller batch sizes, which in turn means that production facilities need to be changed over frequently too.

The disadvantage of using hand wheels and mechanical stops for these changeovers is not just a case of losing valuable time – it is also impossible to ensure complete repeatability and, as a result, it is very difficult to ensure high-quality production.

An individual system solution: Using RapCo for automatic production facility changeovers

RapCo (Rapid Change Over) is a complete, individual system solution comprising sensors, drives, a control system, display, and cabling. This system solution adjusts mechanical stops automatically and safeguards both product quality and productivity.

RapCo is based on the concept of a black box, which allows all the required settings to be configured via the display. This does not require any knowledge of PLC programming. The features that make RapCo a winning solution are its precision, repeatability, time savings, batch-specific settings, reduced waste, and documentable process and production quality. The system solution can be used in any industry (e.g., food and drink, pharmaceuticals, or consumer goods) and with any type of machine made by any manufacturer.
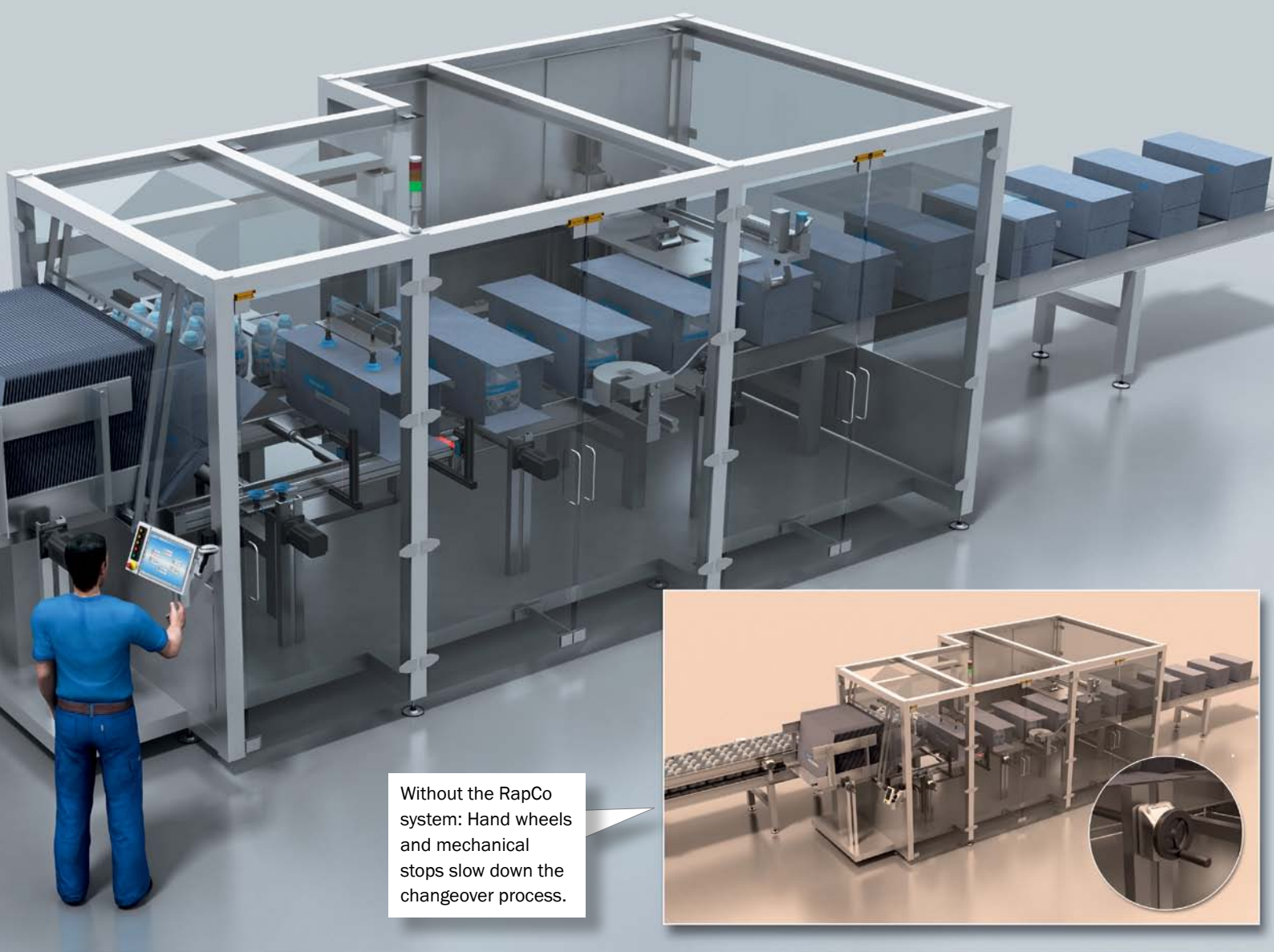
Without the RapCo system: Hand wheels and mechanical stops slow down the changeover process.

Advantages at a glance

➕ Greater variety of products in any one production facility
More than 500 products can be produced per facility

➕ Reduced machine downtimes
More than 100 machine settings available at any one time

➕ Takes the strain off machine operators and service personnel
Operation and hardware concept fulfills a range of requirements

➕ A solution to suit different needs
Freely configurable and can be extended to include a whole range of different facilities

➕ Ensures production quality and traceability
Integration of intelligent sensors plus camera and reading systems

## CONTENTS

Diagram of a production facility with RapCo system features
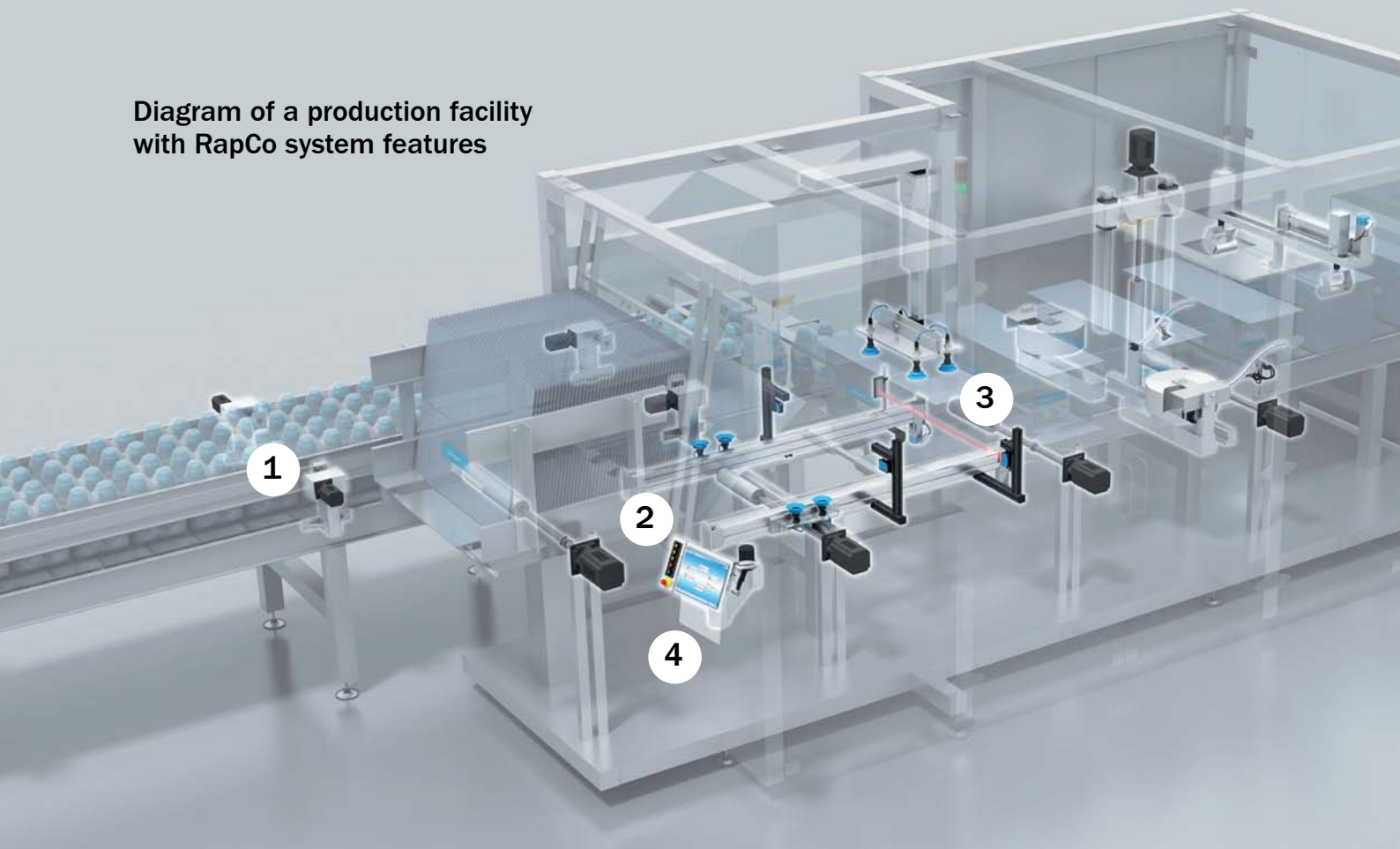
Example of a production facility retrofitted with the RapCo system, which comprises sensors, drives, a control system, a display, and cabling. Mechanical stops are now adjusted automatically. All the necessary settings are configured fully automatically via a single display, thus replacing the need to make them by hand. The process does not require any knowledge of PLC programming.
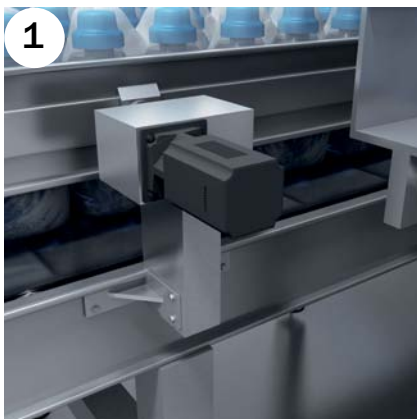
Automatic adjustment
Hand wheels and mechanical stops are replaced with drives, sensors, and linear units.


Black box concept
No programming involved, just configuration and parameter setting. All settings specific to the facility are configured and managed centrally via the display.

What makes SICK's RapCo solution a winner:

- ⊕ Precision
- ⊕ Repeatability
- ⊕ Time savings
- ⊕ Batch-specific settings
- ⊕ Increased productivity
- ⊕ Documentable process and production quality
- ⊕ For use in any industry
- ⊕ Configuration options provide maximum flexibility

3
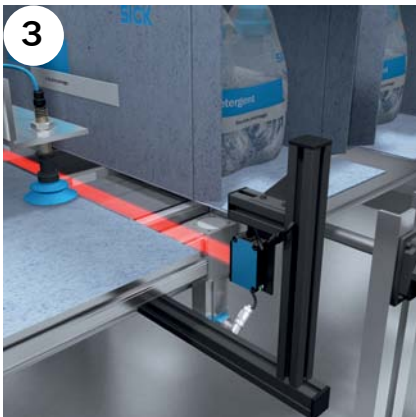
Collision prevention
Freely configurable photoelectric proximity sensors prevent collisions caused by products that have been left behind, incorrectly installed format modules, and so on.

4

Quality and traceability
Format-specific target and actual positions, the system status, or internal system information can be read out and processed at any time using TCP/IP.

Overview of system functions

- System boundaries
  - 74 configurable axes
  - 40 freely configurable inputs and outputs
  - More than 500 freely configurable formats
- Readjustment possible using the display or the configurable inputs and outputs
- Direction of travel can be configured for each axis
- Customizable display language can be changed according to country
- Group management can be configured for up to 8 groups that differ logically and/or physically
- Quick facility start-up – no more reference runs required thanks to each drive's absolute encoder
- All target and actual positions can be read out any time using TCP/IP
- Possible to define 5 users with different authorizations
- Complete system configuration can be backed up using standard PC systems
- Internal algorithms and additional sensor technology protect the axes against potential collisions
- Straightforward system diagnostics thanks to fault management system complete with history function and context-specific online help on the display
- High availability thanks to effective and user-friendly diagnostics concept
- Format can be selected using the display or hand-held scanners
- Freely configurable inputs and outputs available for connection to warning lights, valves, buzzers, and other signaling devices.

System overview
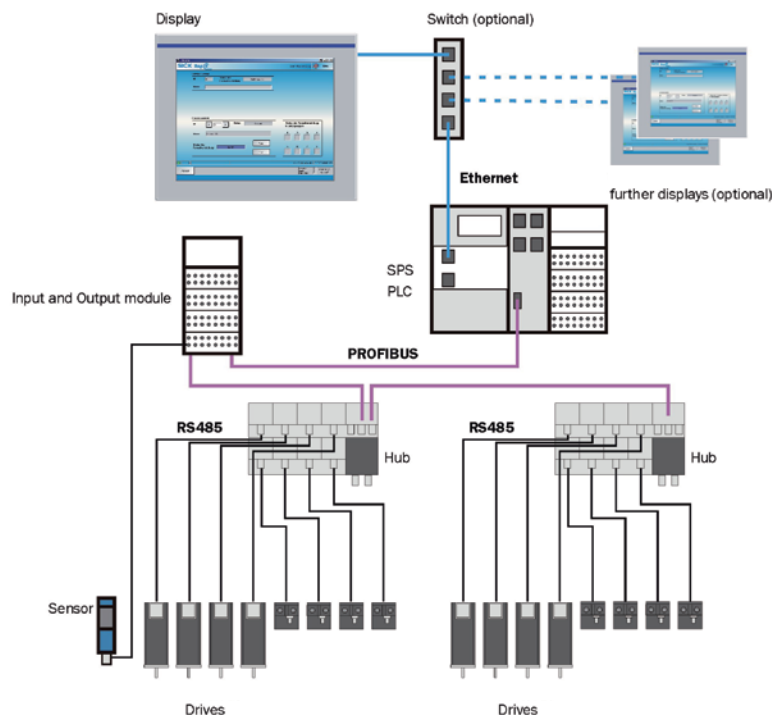
Taking the first steps toward installing a RapCo system in your production facility:

A RapCo system is more than just a component, so it takes more than simply an item number to order it. That's why we talk to you in person about installing RapCo at your production facility.
Think you'd like to take the next step? Then just follow the information below:

Step 1
Have an initial discussion with an engineer and fix a date to look round the facility together.
This step involves developing the concept and checking whether the project is feasible from a technical perspective.

Step 2
Decide whether you want to carry out the mechanical and electrical installation work for RapCo yourself, or if you would prefer SICK or one of its certified partners to do this for you.

Step 3
RapCo is installed. You receive comprehensive documentation and detailed instructions for the system.
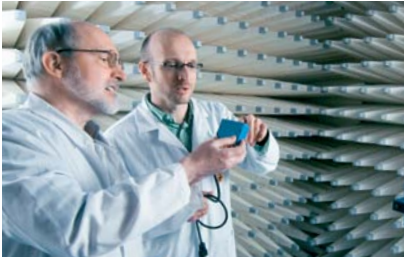

Step 4
Installation is complete: RapCo is now ready to use.
If you have any questions, SICK's engineers will be happy to help you at any time.

You can find additional information at www.SICK.com/RapCo

SICK at a glance

Leading technologies

With a staff of more than 5,000 and over 50 subsidiaries and representations worldwide, SICK is one of the leading and most successful manufacturers of sensor technology. The power of innovation and solution competency have made SICK the global market leader. No matter what the project and industry may be, talking with an expert from SICK will provide you with an ideal basis for your plans – there is no need to settle for anything less than the best.

Unique product range

- Non-contact detecting, counting, classifying, positioning and measuring of any type of object or media
- Accident and operator protection with sensors, safety software and services
- Automatic identification with bar code and RFID readers
- Laser measurement technology for detecting the volume, position and contour of people and objects
- Complete system solutions for analysis and flow measurement of gases and liquids

Comprehensive services

- SICK LifeTime Services – for safety and productivity
- Application centers in Europe, Asia and North America for the development of system solutions under real-world conditions
- E-Business Partner Portal www.mysick.com – price and availability of products, requests for quotation and online orders

Worldwide presence with subsidiaries in the following countries:

Australia
Belgium/Luxembourg
Brasil
Ceská Republika
Canada
China
Danmark
Deutschland
España
France
Great Britain
India
Israel
Italia
Japan

México
Nederland
Norge
Österreich
Polska
România
Russia
Schweiz
Singapore
Slovenija
South Africa
South Korea
Suomi
Sverige
Taiwan
Türkiye
United Arab Emirates
USA

Please find detailed addresses and additional representatives and agencies in all major industrial nations at
www.sick.com

SICK
Sensor Intelligence.