

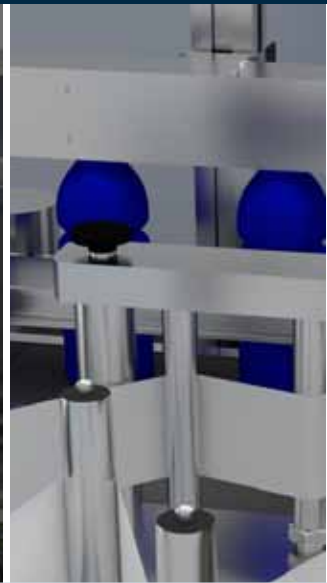


**Solutions**

# **Packaging Machinery**

# Packaging Machinery

## Solutions for



**Filling**

**Inspection**

**Wrapping  
and sealing**

**Labelling**

### ABOUT CARLO GAVAZZI

Carlo Gavazzi Automation is an international group active in designing, manufacturing and marketing electronic equipment targeted at the global markets of industrial and building automation.

Our history is full of firsts and our products are installed in a huge number of applications all over the world. With more than 80 years of successful operation, our experience is unparalleled.

We have our headquarters in Europe and numerous offices around the world.

Our R&D competence centres and production sites are located in Denmark, Italy, Lithuania, Malta and the People's Republic of China.

We operate worldwide through 22 of our own sales companies and also selected representatives in more than 65 countries, from the United States in the West to the Pacific Rim in the East.

Our core competence in automation spans four product lines: Sensors, Switches, Controls and Fieldbuses.

Our wide array of products includes sensors, monitoring relays, timers, energy management system, solid state relays, safety devices and fieldbus systems.

We focus our expertise on offering state-of-the-art product solutions in selected market segments.

Our customers include original equipment manufacturers of packaging machines, plastic-injection moulding machines, food and beverage production machines, conveying and material handling equipment, door and entrance control systems, lifts and escalators, as well as heating, ventilation and air-conditioning devices.



## DESIGNED TO MEET MARKET REQUIREMENTS

The growing markets in consumer goods and packaged pharmaceuticals drive the development of packaging equipment. Filling and sealing machines, also labelling and coding devices are important to ensure product safety throughout the supply chain.

To meet these needs, the industry has gradually introduced more automation and more sophisticated electronic controls.

In today's packaging production lines, the different stages are completed in minutes rather than in hours compared to years past.

In all types of packaging machinery – in all sectors of industry - each component must meet the strict requirements of the individual application.

This is to guarantee the continuity of production and the conformity of the packaged product to quality standards.

For many years, Carlo Gavazzi photoelectric, inductive and capacitive sensors have proven to be the best solution in applications for filling and checking.

In shrink wrapping applications, careful control of heating is essential for good results. Solid state relays are used to switch the heaters on and off in order to maintain the correct temperature.

The packaging industry also needs safety devices to guarantee the safety of the operators engaged in the work area, ensuring safe operation of the machines.

Carlo Gavazzi's comprehensive safety range includes safety light curtains and key switches that detect intrusions within the non-safe zone/s and shut down the machinery in a controlled manner via standard and/or configurable safety modules.

For all its products, Carlo Gavazzi offers easy installation, high precision and long term reliability.

# Filling Packaging Machinery



## Photoelectric sensors

PD30ET  
PD30C

## Photoelectric sensors

PA18  
PH18

## Inductive sensors

ICB12  
ICB18  
ICB30

## Ultrasonic sensors

UA18  
UA30

## Capacitive sensors

CA18  
CA30

## Conductive level probes

CLH  
CLD

Carlo Gavazzi offers a complete range of automation components for the packaging industry.

In a bottling line UA ultrasonic sensors are used to verify that the appropriate level of a product is in the container before it is sealed and shipped.

Ultrasonic sensors are also used to measure the level of ingredients – either liquid or solid – in a container. The continual analog output signal allows for better control of the process. The levels of solid material, such as ground coffee, coffee beans or flour, are accurately detected using photoelectric sensors.

The PA /PH 18 sensors come with a new mounting bracket which allows

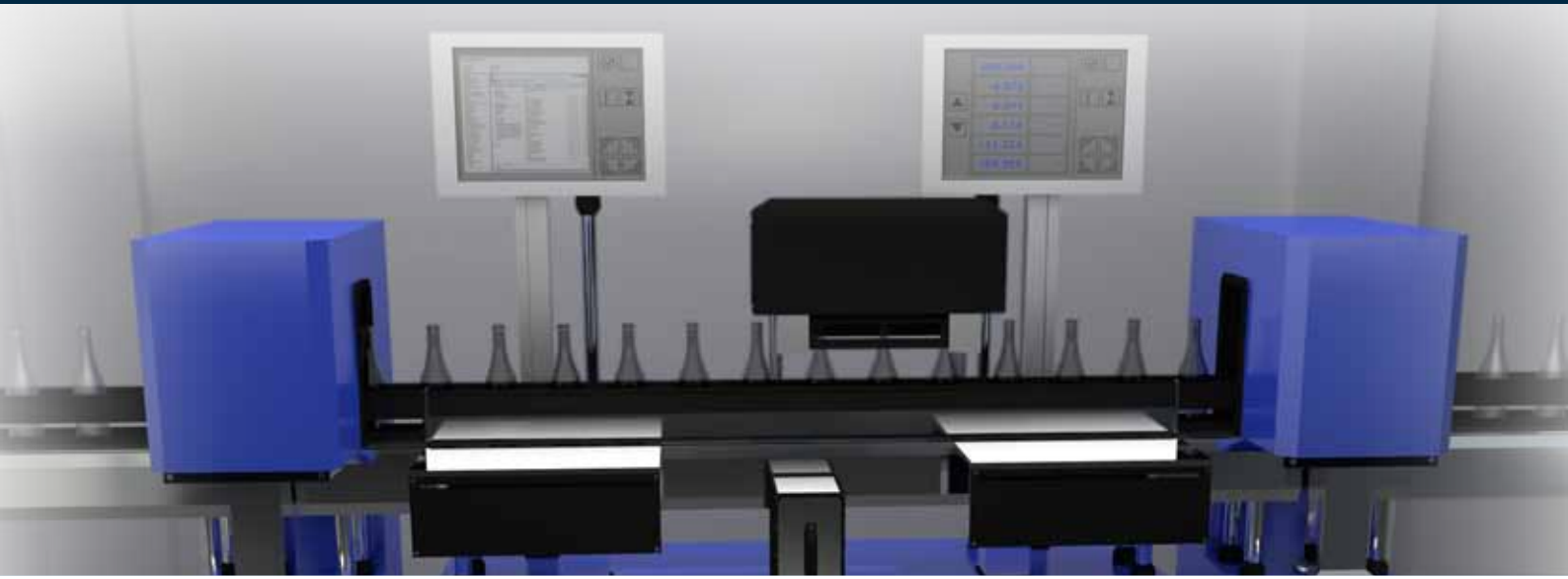
fast mounting and space saving. Axial, radial and square versions are available. Important benefits are that objects do not hit the sensors as often and the conveyor can be cleaned much more easily.

For accurate control of the filling process, PD30 sensors provide an output signal when the product is at the appropriate fill level.

The PD30 Stainless steel sensors are designed for wet as well as dry areas. The stainless steel housing and high-end plastic materials guarantee maximum resistance against IP68K and Ecolab cleaning processes.



# Inspection



## Photoelectric sensors

**PD30ET  
PD30C**

## Photoelectric sensors

**PH18  
PA18**

## Inductive sensors

**ICB12  
ICB18  
ICB30**

## Ultrasonic sensors

**UA18  
UA30**

## Fiber optic amplifiers

**FA1**

## Soft starters

**RSGD**

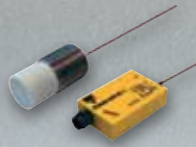


Carlo Gavazzi products have many applications in the inspection-detection field. For bottling lines that have darker or less transparent bottles, PA18 through beam sensors can be used to detect the presence of the bottles. This family of products is from 40 % to 60 % smaller than existing housings. The PD30 Stainless Steel (background suppression) sensors superiorly detects all colours on objects in the same distance from the sensor, and its durable design withstands daily cleaning processes. The specialised optics of the PD30CNG - combined with a reflector - are perfect for detecting clear bottles on a conveyor. In some confectionery applications, it is

necessary to detect if a cake decoration is present or properly positioned. The PD30 diffuse sensor recognise the coloured decoration on top of the cake. Furthermore, the new fiber optic amplifier FA1 and the series of fiber optic cables FUR & FUT offer even more flexibility to the packaging market segments". To verify that a bottle cap is present on the bottle a FA1 fiber optic amplifier with a fiber optic cable and lens are positioned above the bottles and programmed to detect any reflection from the bottle cap.

# Packaging Machinery

## Wrapping and sealing



**Photoelectric sensors**

**Photoelectric sensors**

**Capacitive sensors**

**Solid state switches**

**Solid state switches**

**3-phase solid state contactors**

**PD112**

**PD30CN**

**ECH**

**RGS  
RGC  
RM**

**RGC15  
RGS15**

**RGC3A  
RGC2A**

Multiple bottles are bundled together and shrink-wrapped. Carlo Gavazzi solid state relays (RM or RG series) allow fast switching of heaters that enable accurate control of the process temperature thus maintaining an even shrink of the plastic wrap. Solid state solutions allow frequent switching without affecting the lifetime of the switch, unlike mechanical contactors. In order to verify that the shrink-wrap has been added, a PD30CNG clear object sensor is positioned to focus at the level of the bottle necks. If the shrink-wrap is present, the clear object sensor will have a continuous output as the package passes by.

Diffuse reflective photoelectric sensors with long detecting distance (PD112)

detect goods on the pallet to ensure that wrapping is stopped at the required height.

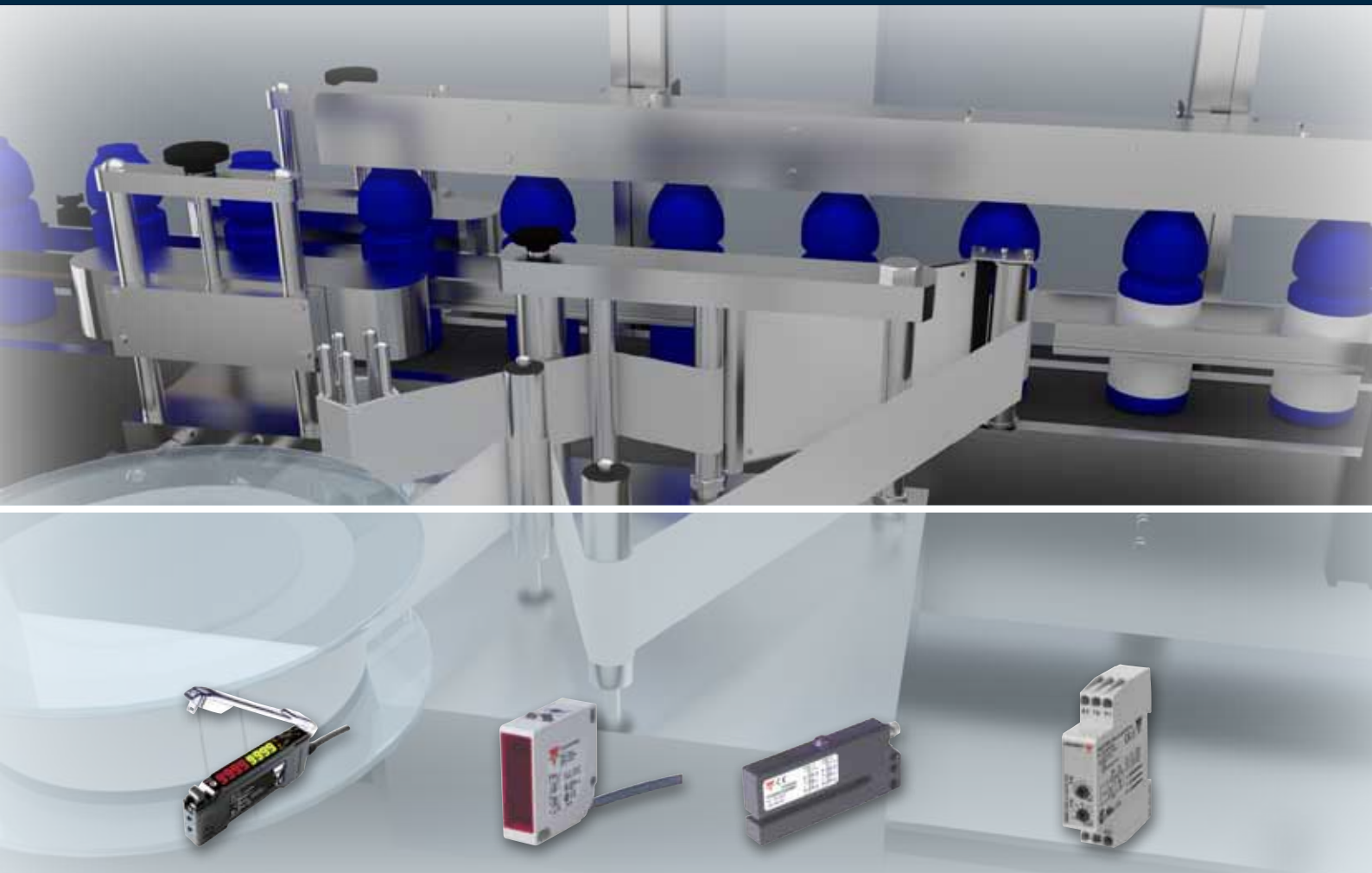
In hot-melt heating systems the high temperature ECH sensors have proven their capability and reliability.

Other applications include automatic continuous processes of thermoforming,

filling and sealing. The RG range offers a wide variety of solutions, starting from just solid state switching of heaters to more sophisticated solutions that apart from the switching function integrate monitoring features that are able to detect load and system malfunctions to guarantee a reliable thermal process.



# Labelling



## Fiber optic amplifiers

**FA1**

Once a container is filled, the next step is to apply the appropriate label. A fiber optic amplifier FA1 is used to detect the presence of a mark on a bottleneck label, which confirms that the bottle is in correct position for the main label to be applied. These sensors also detect the presence

## Photoelectric sensors

**PC50**

of security bands which are required on many bottles and containers. They recognise the difference between the security band and bottle cap. The FA1 is compact and highly intuitive for easy setup. It is equipped with two 4-digit LED displays for clear and concise reading. An adjustable signal

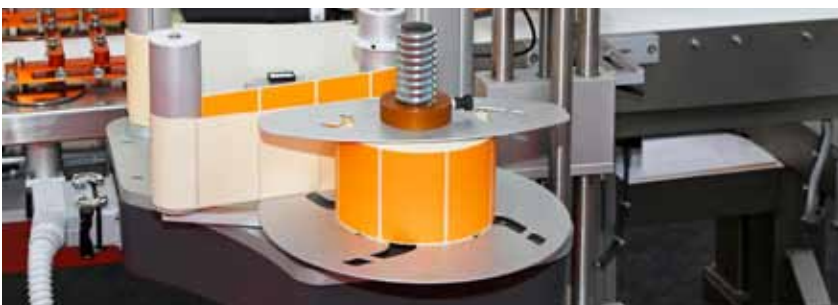
## Photoelectric fork sensors

**PF80**

level, selectable response time and different timer functions provide full flexibility. Coupled with the robust and complete range of fiber optic cables FUR & FUT, this amplifier can be used in many applications. Precise control of labels, even small labels, is an important part of the packaging process. The surfaces of the labels are often reflective. The photoelectric proximity sensors provide the necessary sensitivity for maximum reliability. Detection of labels, marks and double sheets, as well as holes and edges, are typical applications for the PF80 fork sensor

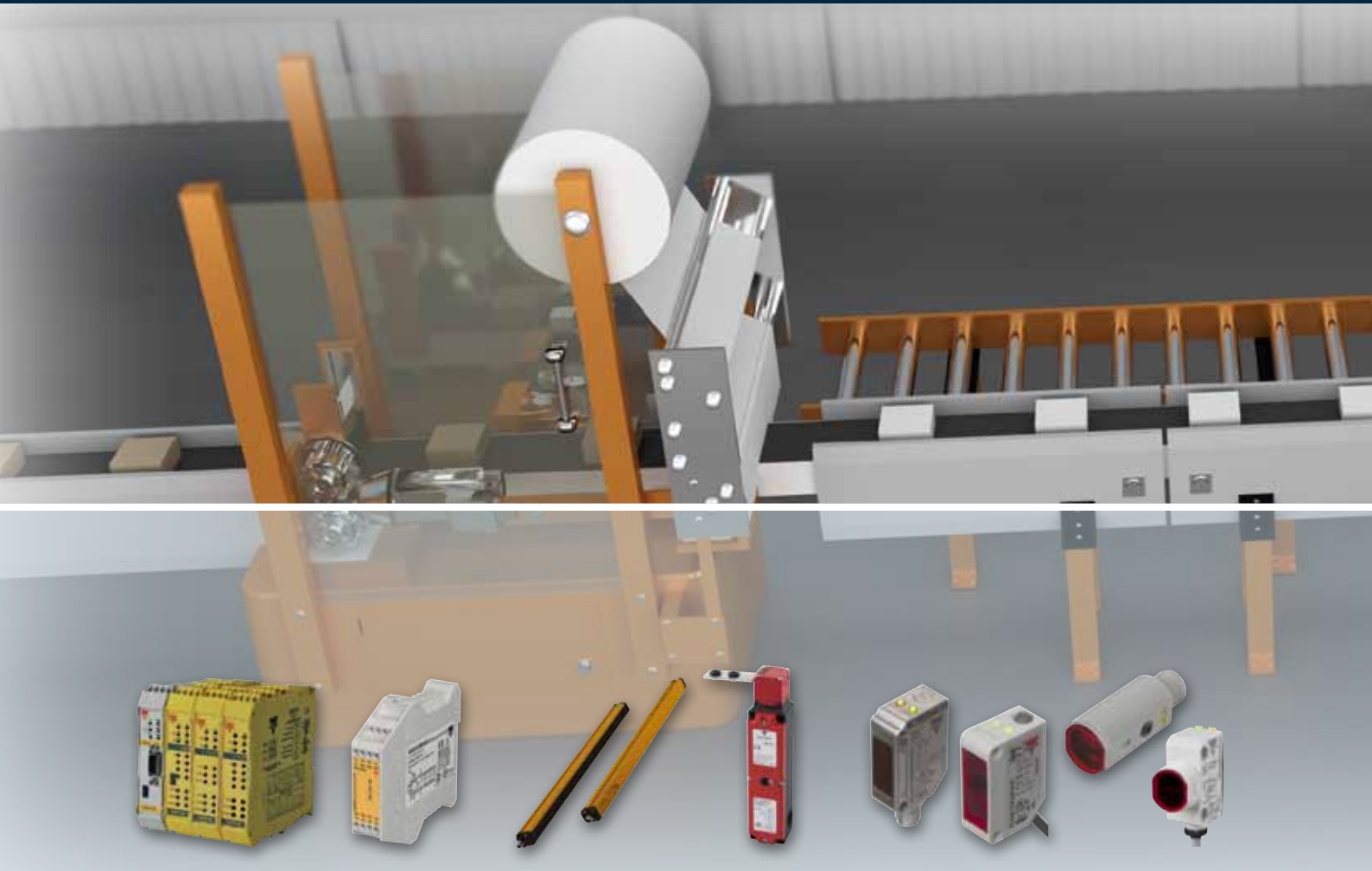
## Timers

**DAA51  
DMB51**



# Packaging Machinery

## Our expertise



**Certus  
configurable  
safety modules**

**CERTUS**

**Safety  
modules**

**NES  
NLG**

**Safety  
light curtains**

**SC4  
SC2**

**Electromagnetic  
safety  
interlocks**

**ESI**

**Photoelectric  
sensors**

**PD30ET  
PD30C**

**Photoelectric  
sensors**

**PA18  
PH18**

Carlo Gavazzi's safety devices are used to prevent access to dangerous areas, until the machines are completely stopped. For example, the CERTUS configurable safety module offers up to 128 inputs and 16 pairs of programmable solid state outputs in a compact modular system, managing and monitoring at the same time safety sensors and commands such as: safety light curtains, photocells, emergency stops, two-hand controls, mechanical switches, laser scanners, and safety mats.

Safety light curtains, types 2 and 4, with the muting function provide easy access to load and unload optimising productivity output. The type 4 safety light curtains also feature the EDM function to control the reliability of external devices.

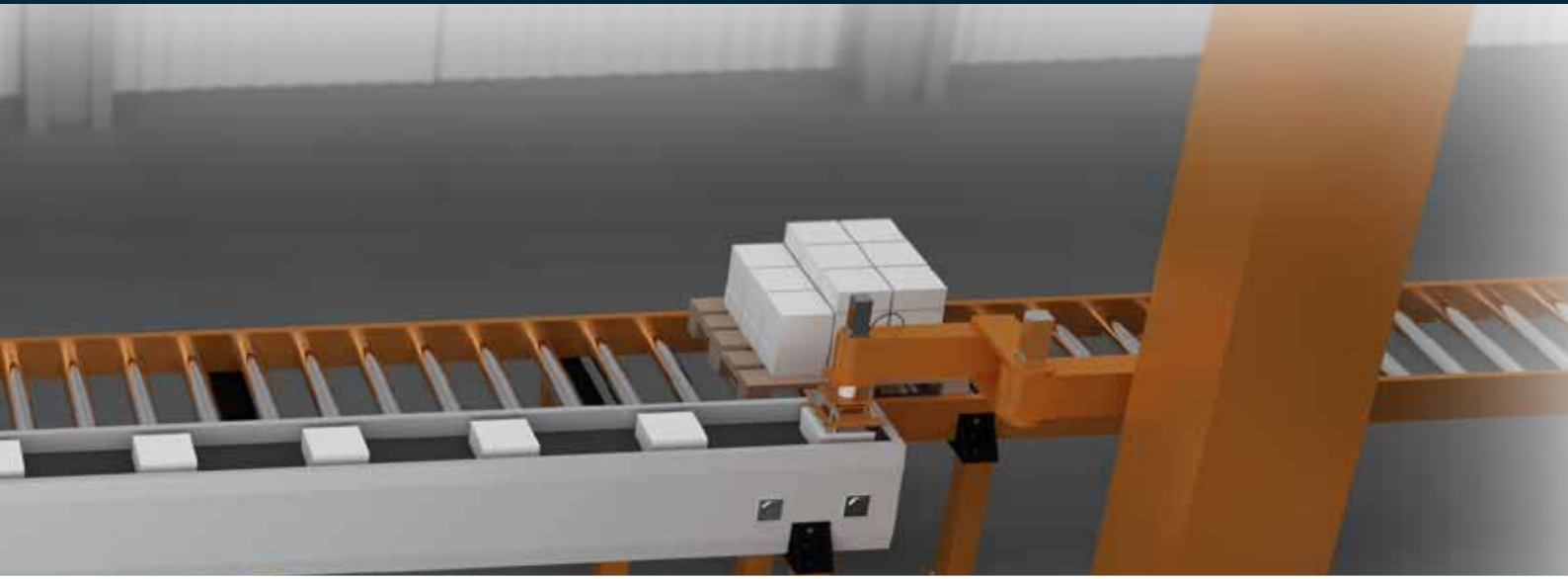
All around the packaging machine photoelectric sensors (PD30, PA18 and PH18) are widely used to detect the position of the items to be packed and/or to detect the position of the carton box.

When packaging the products into a carton box, the boxes are stacked up unfolded on one side of the machine. Two photoelectric

sensors are used: one to detect that there are enough unfolded carton boxes in the pipeline, the other one to detect when an unfolded carton box is ready to be fed into the packaging machine. If it is not present then the stack of unfolded carton boxes is pushed forward until this sensor detects the first box.



# Safety devices and energy efficiency



### Safety magnetic switches

SMS  
CLS

Our safety magnetic sensors (SMS, CLS) are particularly addressed to the safety gates that allow the entry to machines with dangerous movements.

Carlo Gavazzi offers a vast array of products to improve energy efficiency and to ensure the monitoring of entire processes - all from one source.

### 3-phase power analysers

WM20

### Energy analysers / transducers

EM210  
ET112  
ET340

Energy management components, for instance, provide vital information for operators to identify consumption trends and take corrective action. WM20 power analyser, EM210 energy analysers or the ET energy transducers can monitor all the main parameters of an electric line or load.

### Monitoring relays

DPD02  
DPA01/DPB01  
DIA/DIB/DTA

### Switching power supplies

SPD  
SPPC  
SPM

### DC UPS

SPUBC  
SPUC

Monitoring relays DPA01 monitor phase sequence and phase loss of motors, DPD02 and DPB01 also monitor mains over or under voltages. Overloads can be prevented with the DIA and DIB current monitoring relays whilst the DTA71 and DTA72 relays detects and disables motors in case of overheating.

Carlo Gavazzi timers - available in four different housings (standard DIN-rail, Plug-in, 48x48 and MiniD housing) - provide correct, reliable solutions for every application.

The SPUC and the SPUBC modules guarantee power supply and electrical continuity in case of mains failure.



# Packaging Machinery

## Our product range

### Photoelectric sensors



#### PA18 / PH18

- Standard M18 cylindrical housing
- Power supply: 10 to 30 VDC
- Separate models available for NPN or PNP outputs
- Range: 1 m (Axial), 0.8 m (Radial)
- Sensitivity adjustment by potentiometer
- Approvals/Marks: CE - cULus

#### MAIN FEATURES

- Complying with the requirements of ECOLAB, PI67, IP69K
- Approved according to UL508
- Diagnostic LED indication (Green and Yellow LED)
- Short-circuit, reverse polarity and overload protection

### Photoelectric sensors



#### PD30C

- World standard housing style 10.8 x 30 x 20 mm
- Power supply: 10 to 30 VDC
- NPN or PNP transistor output
- Sensitivity adjustment by Teach-in or by potentiometer
- Approvals/Marks: CE - cULus (UL508, CSA C22.2)

#### MAIN FEATURES

- Background suppression version, with accurate detection now also with PointSpot light
- Long detecting distances
- Protection: reverse polarity, short circuit and transients

### Photoelectric sensors



#### PD30ET

- World standard housing style 11 x 31.5 x 21 mm
- Supply voltage: DC 4-wire
- Output: NPN/PNP NO+NC
- Sensor types: D, B, R, P and T
- Connectivity: Cable or M8 connectors
- Approvals/Marks: CE - cULus (UL508, CSA C22.2) - ECOLAB

#### MAIN FEATURES

- Stainless Steel housing AISI 316L
- Resistant to high-pressure washdown, aggressive cleaning agents.
- IP67, IP68, IP69K, NEMA type 1, 2, 4, 4x, 5, 6, 6P
- Protection: reverse polarity, short circuit and transients

### Photoelectric sensors



#### PC50

- Dimensions: 17 x 50 x 50 mm
- Sensing distance up to 20 m
- Modulated infrared light
- Make and break switching function selectable
- Cable and plug version
- Approvals/Marks: CE - UL - CSA

#### MAIN FEATURES

- Adjustable sensitivity
- High EMC immunity
- Protection: reverse polarity, short circuit and transients

### Photoelectric sensors



#### PD112

- Dimensions: 25 x 45 x 112 mm
- Long range background suppression (BGS) sensor
- Power supply receiver: 10 to 30 VDC
- NPN and PNP NO or NC output
- Emitter with Mute Input for testing sensor function
- 2.5 m sensing distance

#### MAIN FEATURES

- Light beam approved to Safety Category 2
- UL325, UL508, EN12445, EN12453, EN12978
- Long detection range on black objects

### Fiber optic amplifiers



#### FA1

- 2 X 4 digit LED display for signal and threshold level
- Easy setup 3 way adjustment switch
- Selectable response time, timing delay functions
- 100 mA NPN PNP NO NC Switching

#### MAIN FEATURES

- Varieties of through beam and reflective fiber optic cable
- Ø 0.25, 0.5 or 1.0 mm inner fiber diameter for different applications
- Extra overmoulding on fiber units for better fiber curvature protection

### Photoelectric fork sensors



#### PF80

- Dimensions: 12 x 37.5 x 80 mm. Slot width 3 mm
- Teach-In: push button or by wire
- Rated operational voltage 10 - 30 VDC
- Aluminium housing
- Approvals/ Marks: CE

#### MAIN FEATURES

- High speed of detection
- Detection of transparent material
- Detection of labels, marks and double sheets

### Inductive sensors






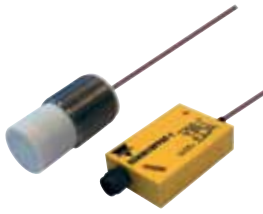
#### ICB12 / ICB18 / ICB30





- M12, M18 and M30 Nickel-brass housing in short or long barrel lengths
- Standard, double and triple distance sensing ranges
- Output functions: NO or NC, NPN or PNP
- Two metres oil resistant PVC cable or M12 plug version
- Protection: reverse polarity, short circuit, transients

#### MAIN FEATURES

- High precision and reliability thanks to the microprocessor technology
- Short-circuit and overload LED indication
- Laser engraved information on the front cap, permanently legible

# Our product range

Conductive level controllers / probes	Ultrasonic sensors	Capacitive sensors	Capacitive sensors
 <p><b>CLD / CLH</b></p> <ul style="list-style-type: none"> <li>• 17.5mm slim housing, 22.5mm &amp; 35 mm housing available</li> <li>• Multiple filling and emptying functions</li> <li>• 24-240 VAC/DC (CLD2EB1BU24)/ 24 VDC, 115 VAC, 230 VAC</li> <li>• Flexible modular probes up to 5 electrodes (CLH5)</li> <li>• Extendible probes for longer length</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Wide operational supply voltage range</li> <li>• Slim compact housing</li> <li>• Wide sensitivity adjustment 250 Ω to 500 KΩ</li> <li>• Cascading amplifiers for more levels (CLP2FA)</li> </ul>	 <p><b>UA18 / UA30</b></p> <ul style="list-style-type: none"> <li>• Dimensions: M18, M30</li> <li>• Ultrasonic sensors with integrated amplifier providing a digital and/or analog output and integrated amplifier</li> <li>• Housing material: plastic and stainless steel</li> <li>• Sensing distance up to 6 m</li> <li>• Approvals/Marks: CE - cULus - CSA</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Excellent EMC performance and precision</li> <li>• Detects clear, transparent and shiny targets, solid objects, liquid or granules.</li> <li>• Protection: short circuit, transient and reverse polarity</li> </ul>	 <p><b>CA18 / CA30</b></p> <ul style="list-style-type: none"> <li>• 4<sup>th</sup> generation Tripleshield™ technology</li> <li>• Dimensions: M18 / M30</li> <li>• Plastic housings DC versions</li> <li>• Sensing distance up to 30 mm</li> <li>• Approvals/Marks: CE - cULus</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Highest EMC immunity</li> <li>• ESD ratings up to 40 KV</li> <li>• Sensing face temperature up to 120°C</li> <li>• Best immunity towards Inverters</li> </ul>	 <p><b>ECH</b></p> <ul style="list-style-type: none"> <li>• Sensor diameter: M30, teflon and stainless steel</li> <li>• Adjustable sensing distance: 4 to 15 mm, factory set for 10 mm</li> <li>• Output: transistor NPN or PNP, make &amp; break switching</li> <li>• Power supply: 10 to 40 VDC</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Provided with a separate teflon sensor head in M30 for temperature application within the range of -196°C and +180°C</li> <li>• Protection: reverse polarity, short-circuit, transients</li> </ul>
<p><b>PCB mount solid state relays</b></p>	<p><b>1-phase solid state relays</b></p>	<p><b>1-phase solid state switches</b></p>	<p><b>1-ph solid state switches with current monitoring</b></p>

 <p><b>RP1</b></p> <ul style="list-style-type: none"> <li>• Dimensions: 25.4 x 43 x 10.5 mm</li> <li>• Operational voltage range: 24-480 VAC</li> <li>• Rated operational current: 3, 5, 5.5, 10 AAC</li> <li>• Control input ranges: 4-32 VDC, 16-32 VAC</li> <li>• Approvals/Marks: CE - cURus - VDE [RP1...3,5,6]</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Zero cross or random switching</li> <li>• 4 kV isolation between input &amp; output</li> <li>• Accessories for DIN mount option available</li> </ul>	 <p><b>RM1.. / RAM1..</b></p> <ul style="list-style-type: none"> <li>• Dimensions: 58.2 x 44.8 x 28.8 mm, panel mount</li> <li>• Rated operational voltage: up to 660 VAC</li> <li>• Rated operational current: 25, 50, 75, 100, 125 AAC</li> <li>• Control input ranges: 4-32 VDC, 20-280 VAC</li> <li>• Approvals/Marks: CE - cURus - CSA - CCC - VDE [RAM1..]</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Zero cross or random switching</li> <li>• Low noise emission - EN55011 class B conformance [RM1A..L]</li> <li>• Integrated over-voltage protection [RM1]</li> </ul>	 <p><b>RGS1A.. / RGC1A..</b></p> <ul style="list-style-type: none"> <li>• Product width: 17.5 mm up to 70 mm, DIN or panel mount</li> <li>• Ratings: up to 660 VAC, 90 AAC, 18000 A<sup>2</sup>s</li> <li>• Integrated output overvoltage protection</li> <li>• Control input ranges: 4-32 VDC, 20-275 VAC (24-190 VDC)</li> <li>• Approvals/Marks: CE - cULus (RGC) - cURus (RGS) - CSA (RGS) - VDE - GL (RGC up to 30 AAC)</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Integrated heatsink (RGC1..), without heatsink (RGS1..)</li> <li>• 100 kA short circuit current rating</li> <li>• Optional overtemperature protection</li> </ul>	 <p><b>RGS1S.. / RGC1S..</b></p> <ul style="list-style-type: none"> <li>• Product width: 22.5 mm up to 70 mm, DIN or panel mount</li> <li>• Ratings: up to 660 VAC, 90 AAC, 18000 A<sup>2</sup>s</li> <li>• Integrated output overvoltage protection</li> <li>• Control input range: 4-32 VDC</li> <li>• Approvals/Marks: CE - cULus [RGC1S] - cURus [RGS1S] - CSA [RGS1S]</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Partial load failure detection (1/6)</li> <li>• Monitoring for SSR and load circuit malfunction</li> <li>• TEACH by local push button or remote signal</li> </ul>
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# Packaging Machinery

## Our product range

### 3-phase solid state contactors



#### RGC3A.. / RGC2A..

- Product width: up to 70 mm, DIN-rail mounting
- Ratings: up to 660 VAC 75 AAC/pole [RGC2], 65 AAC/pole [RGC3] @ 40°C
- Motor ratings up to 11 kW @ 400 VAC, 25 HP @ 600 VAC
- Control input range: 5-32 VDC, 20-275 VAC (24-190 VDC)
- Approvals/Marks: CE - cULus

#### MAIN FEATURES

- 3-phase; 2-pole [RGC2] or 3-pole [RGC3] switching
- Monitoring for SSR and load circuit malfunction [RGC..M]
- 100 kA short circuit current rating

### 3-phase general purpose soft starters



#### RSGD

- Operational voltage range: 187 - 440 VAC, 187 - 660 VAC
- Operational current range: 12 AAC up to 100 AAC
- Control voltage: 24 VAC/DC, 110 - 400 VAC
- Serial communication (Modbus 2-wire) [RSGD 75mm models]
- Approvals/Marks: cULus, CCC, EAC

#### MAIN FEATURES

- Easy to use and set-up
- Self-learning algorithm to adapt to different loads
- Auxiliary relays for top of ramp and alarms

### Variable frequency drives



#### RVLF

- Compact dimensions, with ratings up to 11 kW
- V/F and SLV control inbuilt
- Drive voltage ratings: 100 - 120VAC, 200-240VAC; 380-480VAC
- Drive kW rating: - 0.4kW - 11kW (0.5HP - 15HP)
- Approvals/Marks: CE - cULuS

#### MAIN FEATURES

- Ease of use with minimal settings
- Precision low speed control with SLV algorithms
- Inbuilt filters on most models to reduce harmonics disturbance

### Safety magnetic sensors and units



#### SMS / CLS

- Rectangular or cylindrical housing
- Several output configurations available
- Up to 175 VDC switching voltage
- 350 mA maximum output
- Up to 10 W switching power
- IP67 protection

#### MAIN FEATURES

- Rugged plastic or stainless steel housing
- Operating temperature: -25°C to 70°C
- Cable output or M12 pigtail connection
- Cylindrical or rectangular safety magnets

### CERTUS configurable safety modules



#### CMM

- 4 non-safety test outputs for sensor monitoring
- 2 non-safety programmable digital signal outputs
- 2 non-safety inputs for Start / Restart interlock and EDM
- LOG file with 5 configuration modifications
- Connection with other exp. units via rear bus

#### MAIN FEATURES

- Also usable as a stand-alone device, able to control any other expansion unit
- 8 safety digital inputs
- 2 safety OSSD pairs (400 mA Output)
- Certified to the highest safety levels: SIL 3, SILcl. 3, PL e, Cat.4, CE, TUV, cULus

### CERTUS configurable I/O expansion modules



#### C I/O

- Wide range of Input/Output, Input only or Output only (both OSSD and standard relay) expansion units to serve different application requirements
- Models offer a variety of non-safety Inputs/Outputs such as: inputs for Start/Restart interlock and EDM, test outputs

#### MAIN FEATURES

- The models offer eight combinations:
  - 8 Inputs 2 Outputs; 12 Inputs 8 test Outputs
  - 8 Inputs, 16 Inputs,
  - 2 OSSD, 4 OSSD
  - 2 relay Outputs, 4 relay Outputs

### CERTUS speed monitoring modules



#### CES

- Exp. units to monitor speed (Ple): Zero speed, Max speed, Speed range
- Motion direction; rotation / translation.
- RJ45 for encoder connections and terminal blocks for connection of proximity (up to 2 proximity switches per module).
- Inputs frequency: Encoder up to 500 KHz (300 KHz for HTL), Proximity up to 5 KHz.

#### MAIN FEATURES

- The modules allow to configure up to 4 speed thresholds for each logic output (axis)
- Each module integrates two logic outputs configurable via the MSD and is capable to control up to two independent axes

### Electromagnetic safety interlocks



#### ESI

- Enhancing safety, for applications requiring access to remain closed and locked until potential hazards have stopped or come to a predetermined safe state
- Standards compliance. SIL 3 in accordance with EN 62061, PL e in accordance with EN ISO 13849-1, interlock type 2 in accordance with EN ISO 14119
- Approvals/Marks: CE - cULus - IMQ

#### MAIN FEATURES

- Ensure protection in inertia's machineries
- Protecting machines from interruptions
- Prevents the entry in a dangerous area until the unlock signal
- Manual unlock device for emergency
- Block controlled by solenoid

# Our product range

Safety modules	Safety light curtains	Multifunction monitoring relays with NFC	3-phase monitoring relays
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### NES / NLG Series

- Safety modules for gate and emergency stop [NES] and light curtain [NLG]
- 3 NO safety outputs
- < 30ms response time
- IP40 protection for housing and IP20 protection for terminals
- Approvals/Marks: CE - UL - TÜV - cULus

#### MAIN FEATURES

- Safety category 4
- Performance Level PLe in according with ISO 13849-1
- SILCL3 in according with IEC 62061



### SC2 / SC4

- Lengths from 300 to 1500 mm for type 2
- Resolution: finger, hand
- Lengths from 150 to 1650 mm for type 4
- Resolution: hand, body
- Dimensions: 36.9 x 32.3 mm,
- Approvals/Marks: CE - cULus

#### MAIN FEATURES

- Selectable Manual/Automatic Restart, EDM and Anti-interference
- 24 VDC supply with two PNP transistor outputs
- IEC-61496-2 environment light rejection



### DPD02

- Dimensions: 22.5 mm DIN rail mounting enclosure
- 120 VAC to 480 VAC Delta & Star Mains
- Voltage and frequency monitoring
- 2 SPDT 8A relay outputs
- Approvals/Marks: UL, CSA and CCC

#### MAIN FEATURES

- NFC programming
- Up to 10 configurable setpoints
- Apps for Android and Windows PC programming



### DPA01 / DPB01

- Dimensions: 81 x 22.5 x 99.5 mm DIN-rail housing
- 3-phase monitoring relay for phase sequence and phase loss (DPA01)
- TRMS 3-phase over and under voltage, phase sequence and phase loss monitoring relays (DPB01)
- Approvals/Marks: CE - UL - CSA

#### MAIN FEATURES

- Selection of measuring range by DIP-switches (DPB01)
- Detects when all phases are present and have the correct sequenc (DPA01)
- LED indication for relay, alarm and power supply ON

Motor thermistor relays	Current monitoring relays	Current monitoring relays and Current transformers	3-phase power analysers
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### DTA71 / DTA72

- 35 mm Mini-DIN housing
- Motor thermistor relay
- PTC Open and PTC Short detection
- Universal power supply from 24 V to 240 VAC/DC
- Approvals/Marks: UL - CE

#### MAIN FEATURES

- Multicolour LED with alarm discrimination
- Auto or manual, local or remote reset, test function (DTA72)
- Ready for reset function (DTA72)



### DIA53

- Dimensions: 81 x 17.5 x 67.2 mm DIN-rail housing with 12 mm hole for current measurement
- Current monitoring relay with built-in current transformer
- 20, 50 or 100 A full scale
- Self powered
- Approvals/Marks: UL - CSA - CCC

#### MAIN FEATURES

- 2 wire connection
- Knob adjustable setpoint
- Integrated solid state NPN PNP output



### DIB01 / A82

- Dimensions: 81 x 22.5 x 99.5 mm DIN-rail housing
- TRMS AC/DC over or under current monitoring relay
- Direct measuring or through current transformer (A82)
- A82: true RMS AC current metering transformer for 25, 50, 100, 250 or 500 AAC
- Approvals/Marks: UL - CSA

#### MAIN FEATURES

- Programmable latching or inhibit at set level
- LED indication for relay, alarm and power supply ON
- A82: easy interface to PLC or setpoint relays



### WM20

- 96 x 96 mm panel mounting housing
- Accuracy 0.2 % (voltage, current)
- Class 0.5S (kWh)
- Universal power supply
- Front protection degree IP65, NEMA4X, NEMA12
- Approvals/Marks: cULus

#### MAIN FEATURES

- Provides installation data to a SCADA to manage the whole system
- Modular housing to build the instrument according to the real application needs
- Modbus, Ethernet, Profibus, BACnet (IP and MS/TP) communication ports

# Packaging Machinery

## Our product range

### Energy analysers



#### EM210

- 3-phase energy meters with CT connection
- Solid or split-core 5A CT
- Dimensions: 4 DIN modules or 72x72 housing
- Class 1 (kWh) acc. to EN62053-1
- Class B (kWh) acc. to EN50470-3
- Pulse open collector or serial RS485 output

#### MAIN FEATURES

- Very compact and space saving meter
- Can be installed both on DIN-rail or on the panel
- MID annex D certification available

### 1 and 3-phase energy transducers



#### ET112 / ET340

- 2 DIN size; DIN-rail mounting [ET112]
- 3 DIN size; DIN-rail mounting [ET340]
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 2 tariffs, cl. 1 (EN62053-1)
- Measuring inputs: 115/230 VAC, 100 A [ET112], single phase
- Measuring inputs: 208 to 400 V<sub>LL</sub> VAC, 65 A [ET340], 3-phase

#### MAIN FEATURES

- Self-powered
- RS485 Modbus port (screw, 2x RJ45)
- Optical port
- Sealable terminal covers
- CE

### Timers



#### DAA51 / DMB51

- Dimensions: 81 x 17.5 x 67.2 mm DIN-rail housing
- Delay on operate function [DAA], multifunction [DMB]
- Combined AC and DC power supply
- Repeatability: < 0.2%
- Approvals/Marks: UL - CSA - RINA

#### MAIN FEATURES

- Delay on operate/release; interval (manual/automatic start);
- Double interval; symmetrical recycler (ON or OFF first)
- Timing range from 0.1s to 100h

### DIN rail switch mode power supplies



#### SPD

- DIN rail mounting
- 1-phase (5-480 W), 2-phase (100 W), 3-phase (120-960 W)
- Rated input voltage: 85-264 VAC (1-phase), 380-575 VAC (2-phase), 340-575 VDC / 480-820 VDC (3-phase)
- Approvals/Marks: CE - TÜV - cULus - UL1310 Class 2 (<92W), ISA12.12.1 Class 1, Div 2

#### MAIN FEATURES

- Power Factor Correction (PFC)
- Parallel connection
- DC OK output

### Low profile power supplies



#### SPM

- Compact din-rail housing - 1/3/4/5 Din width
- Universal input from 90 - 264 VAC
- Integrated short-circuit and overload protection with built-in input filters
- High efficiencies of up to 89%
- Approvals/Marks: CE - cULus - TÜV

#### MAIN FEATURES

- Compact design for installation within distribution box with ratings up to 100 W
- Intuitive visual and electrical indications
- Selected models comes with UL 1310 Class 2 classification

### Metal enclosed power supplies



#### SPPC

- Output power from 25 W to 800 W
- Input 110/240 VAC single phase
- Short circuit, overload and overvoltage protection
- PFC function available >75 W
- Approvals/Marks: CE - UL

#### MAIN FEATURES

- Adjustable output +/- 10%
- Compact dimensions
- Wide operating temperature range up to 70°C

### DC UPS controllers



#### SPUC

- Up to 30 A UPS controller
- 12 V and 24 V versions
- Outputs for device OK, battery OK and battery Low.
- DIN rail battery accessory available up to 7.2 A/h
- Approvals/Marks: CE - UL

#### MAIN FEATURES

- To be used in addition to 12 or 24 V power supply
- Front 30 A replaceable fuse
- Plug and play: no settings needed

### DC UPS battery chargers



#### SPUBC

- Power supply, UPS and battery charger "All in one"
- 24 VDC 5 A output
- Power boost up to 2 times rated output, permanent.
- Built in battery diagnosis
- Approvals/Marks: CE - UL

#### MAIN FEATURES

- Power supply independent from charger.
- Remote indication for battery operation and battery low
- "Start from battery" and "Empty battery charging" features

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