



## Solutions

# Food and Beverage

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## Solutions for



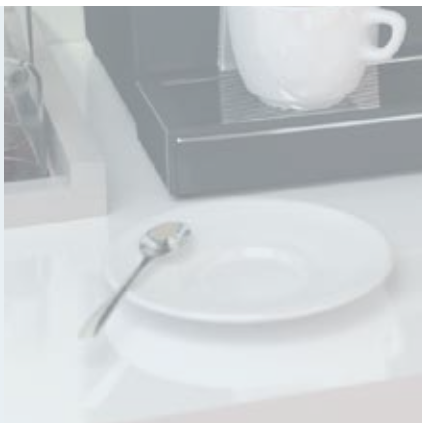
**Coffee  
and vending machines**



**Heating and  
cooking equipment**



**Ice makers  
and cooling systems**



### **ABOUT CARLO GAVAZZI**

Carlo Gavazzi Automation is a multinational electronics group active in designing, manufacturing and marketing of 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 three product lines: Sensors, Switches and Controls.

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

With over 40 years of expertise in manufacturing components for food and beverage equipment, Carlo Gavazzi can provide a wide range of advanced and reliable products for commercial heating and cooking equipment, ice making technology and cleaning processes.

Carlo Gavazzi is a market leader in solid state relay technology, offering innovative solutions in very compact dimensions for the control of heater loads. The range of products includes solid state relays for PCB mounting, chassis mounting as well as solutions ready for use with a built-in heatsink.

The number of switching cycles in food and beverage equipment is quite substantial and a reliable switching solution that guarantees a long, maintenance-free lifetime can be provided only with solid state switching.

Carlo Gavazzi sensors are widely used to detect door closure or to check water level in coffee machines.

Food and beverage processes demand equipment capable of working in harsh environments and conditions.

The Carlo Gavazzi range of sensors includes new photoelectric and capacitive types (Ecolab and IP69K approved) capable of withstanding high pressure and steam cleaning.

Monitoring relays, timers, switching power supplies and energy meters complete the range of Carlo Gavazzi products to ensure safe operation and monitoring of equipment, while increasing longevity.

# Food and Beverage

## Coffee and vending machines



Solid state relays	Solid state relays	Photoelectric sensors	Capacitive sensors	Capacitive level sensors	Magnetic level sensors	Energy analyzers	Monitoring relays
RF1	RAM1A..G RA2A	PD30 PA18 PH18	CD50CNF CA18CA	CD34CNF	ILM ILSP	EM111	DPA52 DPB52 DIB71

Coffee machines, for both domestic and commercial use, must be reliably monitored in order to avoid any damage to the electromechanical elements such as the pump or the electrical resistance. Carlo Gavazzi products provide efficient control and ensure the reliability of equipment.



Level sensors are the best solution to check the water level. The sensor may be installed directly in the bottom of the tank.

Usually, plastic propylene sensors (ILSP, ILM series) are used for this purpose. A second solution consists of a float in the tank controlled by means of magnetic sensors.

The switching of heaters can be carried out reliably with the RF1, RAM1A..G or RA2A series which are fully solid state solutions and hence are not so susceptible to problems concerning contacts and arcing as is the case with electromechanical solutions. The RAM1 and RA2A series are also suitable for motor switching.

In the coffee and vending machine market, the quality of dispensed drinks (hot and cold), reliability, easy cleaning and maintenance are the keys for success.

In coffee machines, the PD30 sensors with background suppression detect the cups to prevent coffee spillage. The CD50 sensors detect the level of coffee beans while the CD34, designed for water-based liquids, can ignore any residual film, moisture or foam.

# Heating and cooking equipment



**Solid state relays**

**RF1**

**Solid state relays**

**RAM1A..G  
RM1A**

**Solid state relays**

**RK2  
RKD2**

**Solid state contactors**

**RGC1A  
RGC2A  
RGC3A**

**Proportional controllers**

**RGC3P  
RGC2P**

**Safety magnetic sensors**

**SMS  
CLS**

**Switching power supplies**

**SPD  
SPPC**

**Energy analyzers**

**EM340**

Manufacturers of cooking equipment such as ovens, griddles, steamers and toasters need to ensure food quality and safety, improving production processes and ensuring long operating lifetime.

Global legislation enforces restrictions and bans on the use of mercury. Carlo Gavazzi solid state relays and contactors are RoHS compliant and are mercury free.

They can operate in humid conditions without being affected by vapors that may be present in the surrounding environment.

The Carlo Gavazzi solid state solutions integrate protection against uncontrolled transients and over

voltages to guarantee reliable operation.

Additionally, the materials used for the RF1, RAM1A..G, RK and RG conform to the glow wire requirements of IEC/EN 60335-1 (Safety of Household and Similar Electrical Appliances).

The RF1, RK and RG series offer the possibility of panel space optimization. The RF1 occupies only 30% of the space required by other panel mount solid state relays, RG solutions are available in a width as small as 17.5 mm and the RK houses 2 poles in one platform providing up to 50% space savings.

The RGCxP series enables analog inputs to be connected directly to the relay when it is necessary to control the

output power in proportion to the level of control input.

Machinery protection from voltage surges, overcurrent or phase loss is ensured by Carlo Gavazzi compact monitoring relays, thus prolonging their lifetime.



# Food and Beverage

## Ice makers and cooling systems



Photoelectric sensors	Inductive proximity sensors	Timers	Capacitive sensors	Capacitive level sensors	Soft starters	Energy analyzers	Digital panel meters
PA18 PH18	IA08 ICS08	HAA08 HAA14 FMB01	CD50CNF	CD34CNF	RSWT RSGD	EM340 EM112	UDM 40 LDM 40

Thanks to the progress in energy efficiency, reduced size and low refrigerant charge there are many applications of ice making technology, with millions of ice makers around the world. You can find ice makers in hotels, bars and restaurants as well as in hospitals, laboratories, supermarkets and in the food industry.

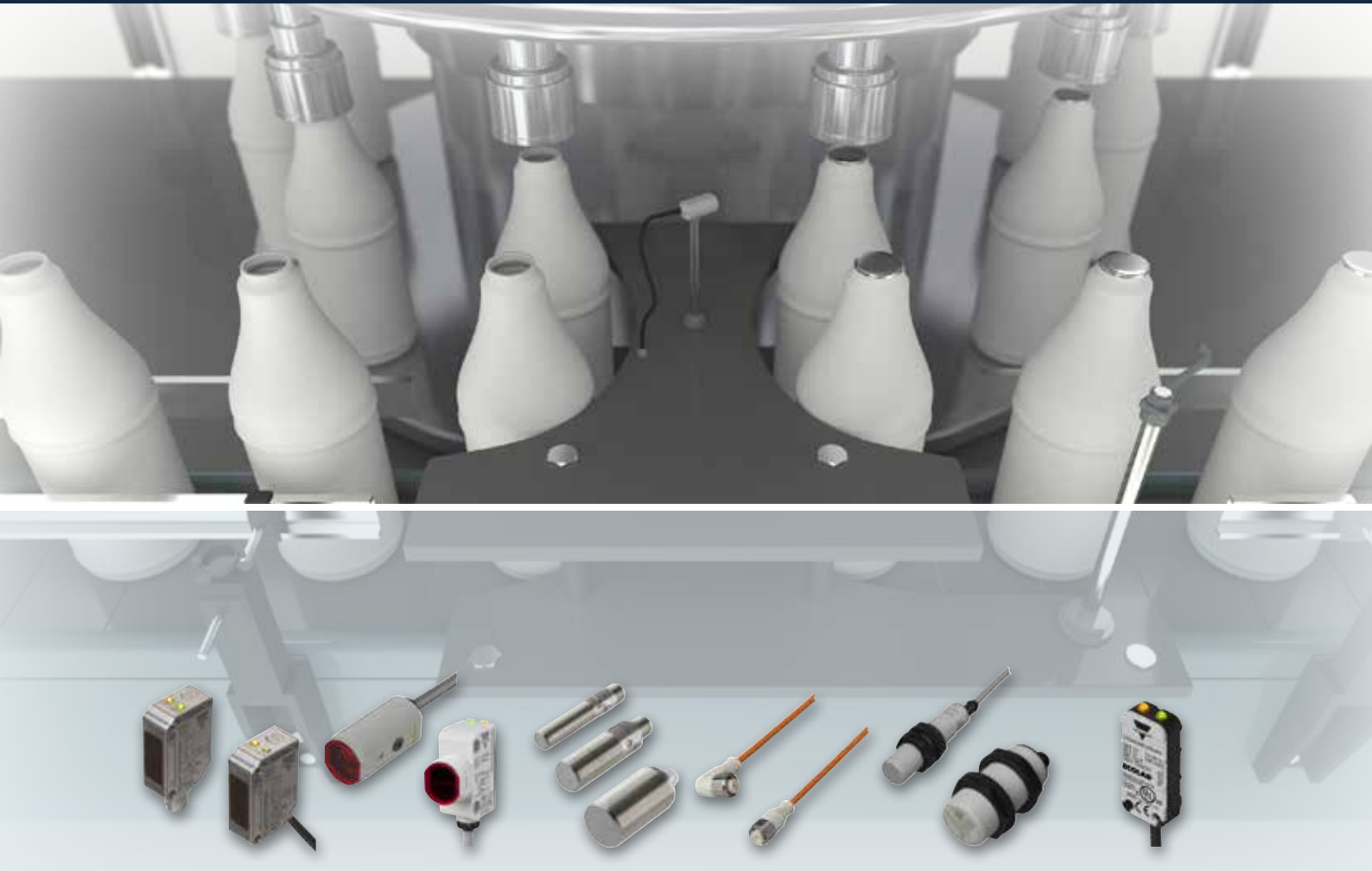
The wide range of inductive, capacitive, photoelectric and ultrasonic sensors by Carlo Gavazzi includes some types suitable to be installed in ice makers. An inductive sensor - specifically designed for this application - detects low speed of the gear motor, sending a signal to the PC board which stops the ice machine operation.

Carlo Gavazzi photoelectric sensors can be used for ice level control. The sensor will send signal to the P.C. board to stop the machine when a beam of light sent by the optical device is shielded by ice. The ice machine will stop making ice before the bin or dispenser is full.

Capacitive sensors also enable accurate control of water levels by sending a water-fill signal to the controller. RSWT and RSGD soft starters are also used to soft start and soft stop high pressure pumps in industrial washing equipment.



# Conveying, filling and cleaning processes



## Photoelectric sensors

**PD30ET**

## Photoelectric sensors

**PA18  
PH18**

## Inductive proximity sensors

**ICS12  
ICS18  
ICS30**

## Cordsets

**CONB14NF  
CONB54NF**

## Capacitive sensors

**CA18CAN/CAF  
CA30CAN/CAF**

## Capacitive level sensors

**CD34CNF**

The food industry requires a high level of hygiene and cleanliness in equipment that has to withstand daily wash-down at high temperatures, high pressure cleaning and harsh detergents.

The PD30ET stainless steel sensors work perfectly even in the harshest environments (e.g. in detecting the presence of meat or meat trays on a conveyor system). The sturdy stainless steel housing (AISI316L) together with high-quality plastic materials such as PEEK, PPSU, and PES sealings of FKM, guarantee outstanding mechanical resistance. These sensors are built to withstand cleaning with water at 80°C (176°F), high pressure washing up to 100 bar (1,450 psi) and to resist alkaline and acidic cleaning agents.

They are IP69K and Ecolab certified.

The PD30 background suppression sensors detect all lid colours on objects at the same distance from the sensor, and their durable design withstands daily cleaning processes.

The PA/PH18 sensor series is another solution for applications where harsh cleaning methods are required. The photoelectric sensors - PA18 series - comply with the requirements set out by Ecolab, IP67, IP69K. Offered in a compact M18 threaded ABS housing, this sensor series is available in both axial (straight) and radial (90° right angled) versions.

The Carlo Gavazzi ICS series of inductive proximity sensors also

the ideal solution for demanding applications characterized by harsh environmental conditions. The Ecolab certification guarantees resistance to industrial cleaning agents, such as alkaline or chlorine foam and acid foam disinfectants. The material used for the plastic cap is FDA certified.



# Food and Beverage

## Our product range

### 1-phase solid state relays



#### RF1

- Dimensions: 36 x 21 x 24 mm, panel mount
- Rated operational voltage: up to 280 VAC
- Rated current: up to 25 AAC
- Control input: 5 VDC, 12 VDC, 24 VDC
- Approvals/Marks: CE - cURus - CSA - VDE

#### MAIN FEATURES

- Zero cross or Random switching
- Suited for resistive loads
- Integrated output overvoltage protection

### 1-phase solid state relays



#### RM1A

- Dimensions: 58.2 x 44.8 x 28.8 mm, panel mount
- Rated operational voltage: up to 660 VAC
- Rated current: 25 AAC, 50 AAC, 75 AAC, 100 AAC
- Control input: 4-32 VDC, 20-280 VAC
- Approvals/Marks: CE - cURus - CSA - EAC - CCC

#### MAIN FEATURES

- Zero cross or Random switching
- Integrated output overvoltage protection
- 1400 Vp blocking voltage

### 1-phase solid state relays



#### RAM1A..G

- Dimensions: 58.2 x 44.8 x 28.8 mm, panel mount
- Rated operational voltage: up to 660 VAC
- Rated current: 25 AAC, 50 AAC, 100 AAC, 125 AAC
- Control input: 4-32 VDC, 20-280 VAC
- Approvals/Marks: CE - cURus - CSA - EAC - CCC - VDE

#### MAIN FEATURES

- Zero cross switching
- Integrated output overvoltage protection
- Certified to EN 60335 glow wire requirements

### 2-pole solid state relays



#### RA2A / RA2A..C

- Dimensions: 57.8 x 44.5 x 31.7 mm, panel mount
- Rated operational voltage: up to 660 VAC
- Rated current per pole: up to 40 AAC
- Control input: 4-32 VDC
- Approvals/Marks: CE - cURus - CSA

#### MAIN FEATURES

- 2 separately controlled relays in a compact platform
- Zero cross switching
- LED per pole for control status indication

### 2-pole solid state relays



#### RK

- Dimensions: 45 x 58 x 33 (44) mm, panel mount
- Independent control (RKD2..) or common control (RK2..)
- Ratings: up to 660 VAC, 50 AAC /pole, 75 AAC /pole
- Control input: 4-32 VDC
- Approvals/Marks: CE - cURus - CSA - VDE

#### MAIN FEATURES

- Integrated output overvoltage protection
- Pre-attached thermal pad
- Conformant to EN 60335-1

### 1-phase solid state relays



#### RGS1A

- Dimensions: 90 x 17.8 x 51 mm, panel mount
- Ratings: up to 660 VAC, 90 AAC, 18,000 A<sup>2</sup>s
- Integrated output overvoltage protection
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- Approvals/Marks: CE - cURus - CSA - EAC - VDE - GL (50 AAC)

#### MAIN FEATURES

- Zero cross or Random switching
- 100 kA short circuit current rating
- Certified as a motor switching device

# Our product range

## 1-phase solid state contactors



### RGC1A

- Product width 17.5 mm up to 70 mm, DIN or panel mount
- Ratings: up to 660 VAC, 85 AAC, 18,000 A<sup>2</sup>s
- Integrated output overvoltage protection
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- Approvals/Marks: CE - cULus - EAC - VDE - GL (up to 30 AAC)

#### MAIN FEATURES

- Zero cross or Random switching
- 100 kA short circuit current rating
- Optional integrated overtemperature protection

## 3-phase solid state contactors



### RGC2A / RGC3A

- Product width up to 70 mm, DIN rail mount
- Ratings: up to 660 VAC, 75 AAC (RGC2A), 65 AAC (RGC3A) @ 40°C
- Motor ratings up to 11 kW @ 400 VAC, 25 HP @ 600 VAC
- Control input: 5-32 VDC, 20-275 VAC (24-190 VDC)
- Approvals/Marks: CE - cULus - EAC - CCC

#### MAIN FEATURES

- 3-phase; 2-pole or 3-pole switching
- Optional monitoring for load and SSR malfunction
- 100 kA short circuit current rating

## 3-phase proportional controllers



### RGC2P / RGC3P

- Product width up to 70 mm, DIN rail mount
- Rated operational voltage: 180 - 660 VAC
- Rated current: up to 75 AAC (RGC2P), 65 AAC (RGC3P) @ 40°C
- Control input: 0-20 mA, 4-20 mA, 12-20 mA, 0-10 V, 0-5 V, 1-5 V, external potentiometer
- Approvals/Marks: CE - cULus - EAC - CCC

#### MAIN FEATURES

- Integrated output overvoltage protection
- Phase angle, Distributed full cycle or Soft start as switching modes
- Integrated monitoring for SSR and load circuit malfunction

## Photoelectric sensors



### PD30ET

- World standard housing style 11 x 31.5 x 21 mm
- Supply voltage: DC 4-wire
- Sensing distance: < 15 m
- Output: NPN/PNP NO+NC
- Sensor types: D, B, R, P and T
- Connectivity: Cable or M8 connectors
- Approvals/Marks: CE - cULus - ECOLAB

#### MAIN FEATURES

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

## 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
- Connection cable or built in M8 connector
- Approvals/Marks: CE - UL 508

#### MAIN FEATURES

- Distance and output setting by means of teach-button (advanced version PD30CN)
- Back potentiometer for sensitivity adjustment (basic version PD30C)
- Long detecting distances
- Protection: reverse polarity, short circuit and transients

## Photoelectric sensors



### PA18

- 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 - ECOLAB

#### MAIN FEATURES

- ECOLAB approved/CE-marking / cULus approved according to UL508
- Diagnostic LED indication (Green and Yellow LED)
- Protection: short-circuit, reverse polarity and overload

# Food and Beverage

## Our product range

### Photoelectric sensors



#### PH18

- Square sensor with M18 front
- Power supply: 10 to 30 VDC
- Separate models available for NPN or PNP outputs
- Sensing types: Diffuse reflective, BGS, Pol. Retro-reflective, Through beam
- Sensitivity adjusted by potentiometer
- Approvals/Marks: CE - cULus - ECOLAB

#### MAIN FEATURES

- ECOLAB approved / CE-marking / cULus approved according to UL508
- Diagnostic LED indication (Green and yellow LED)
- Protection: short circuit, reverse polarity and overload

### Capacitive sensors



#### CA18CAN/CAF / CA30CAN/CAF

- Sensing distance: 0.5 - 12 mm (M18), 2 - 30 mm (M30)
- NPN or PNP versions with N.O. and N.C. output
- Dust or temperature alarm output
- Sensing face can withstand temperature up to 120 °C
- Approvals/Marks: CE - cULus - ECOLAB

#### MAIN FEATURES

- IP69K
- Diagnostic LED indication (Green and yellow LED)
- 4<sup>th</sup> Generation TRIPLESIELD™

### Capacitive sensors



#### CD50CNF

- Dimensions 50 x 30 x 7 mm
- Supply 10-30 VDC or 5 VDC
- 3-wire DC sensors with open collector NPN or PNP transistor output
- Approvals/Marks: CE

#### MAIN FEATURES

- Basic capacitive water level sensor
- Detection of excess water in the tank
- Mounting by screws or glued on the outside of any non-metallic tank

### Capacitive level sensor



#### CD34CNF

- Dimensions 8 x 16 x 34 mm
- Power supply: 10 - 30 DC
- Output: NPN / PNP / NO or NC
- Power supply from 208 to 480 VAC (+/- 15%)
- Connectivity: Cable or M8 4-pin Pig-tail
- Approvals/Marks: CE - cULus - ECOLAB

#### MAIN FEATURES

- Detecting water-based liquids (up to 50 mS)
- Automatic adaption to tank wall thickness
- Eliminating influence from build-up or foam
- IP65, 66, 67, 68, 69K NEMA type 1,2,4,4X,5,12
- Protection: reverse polarity, shortcircuit and transients

### Inductive proximity sensors



#### IA08 / ICS08

- Stainless steel housing M8
- Sensing distance: 1.5 mm to 4 mm
- Power supply: 10 to 30 VDC
- Approvals/Marks: CE - UL - CSA

#### MAIN FEATURES

- Miniature inductive sensors with short or long housing
- Clear LED-indication for output ON
- Protection: reverse polarity, short-circuit and transients
- 2 kHz operating frequency

### Inductive proximity sensors



#### ICS12 / ICS18 / ICS30

- Standard M12, M18 and M30 cylindrical housing
- Power supply: 10 to 36 VDC
- Sensing distance from 2 mm up to 22 mm
- Housing: stainless steel, IP67, IP68 and IP69K
- Approvals/Marks: CE - cULus - c CSAus

#### MAIN FEATURES

- ECOLAB approved
- Short-circuit and overload LED indication
- Extended temperature range: -40°C to +80°C
- FDA approved plastic cap

# Our product range

## Cordsets



### CONB14NF / CONB54NF

- M12 and M8 connectors
- Straight and angled versions
- 2 or 5 m cable length
- 4-wire version
- Degree of protection IP69K

#### MAIN FEATURES

- ECOLAB approved/ UL approved
- Extended Temperature range: -40°C to +105°C
- LED version also available

## Level magnetic sensors



### ILM/ILSP

- Cylindrical, float diameter 17.5 to 53 mm
- Reversible output function by float overturning
- High temperature versions available up to 120°C
- Degree of protection: IP67 minimum

#### MAIN FEATURES

- Cylindrical non-toxic polypropylene or stainless steel housing
- Vertical or horizontal mounting
- NO, NC or change-over output function

## Safety magnetic sensors



### CLS / SMS

- Rectangular or cylindrical housing
- Connection: PVC cable or pigtail solution
- Housing material: Plastic or Stainless steel
- Approvals/Marks: CE - cULus

#### MAIN FEATURES

- Multiple flux coding
- Several combinations of safety and auxiliary outputs available
- Operating temperature -25° to +70°C

## 1-phase energy analyzers up to 45A



### EM111

- 1 DIN module
- Backlit touch LCD
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 7-digits cl. B (EN50470)
- Measuring inputs: 115/230 VAC, 45 A

#### MAIN FEATURES

- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers
- CE - MID (PFA and PFB)

## 1-phase energy analyzers up to 100A



### EM112

- 2 DIN modules
- Backlit touch LCD
- Display backup by supercapacitor
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 8-digits, cl. B (EN50470)
- Measuring inputs: 115/230 VAC, 100 A

#### MAIN FEATURES

- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers
- CE - MID (PFA and PFB)

## 3-phase energy analyzers for direct current up to 65A



### EM340

- 3 DIN modules
- Backlit touch LCD
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 3x8-digit, cl. B (EN50470)
- Measuring inputs: 230 to 400 V<sub>LL</sub> AC, 65 A

#### MAIN FEATURES

- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers
- CE - MID (PFA and PFB)

# Food and Beverage

## Our product range

### Multifunction meters



#### WM14 / WM12

- Dimensions: 6 DIN rail module or 96 x 96 mm panel mounting housings
- 3-phase multifunction indicator (WM12) or analyzer (WM14)
- Accuracy 0.5 % (voltage, current)
- Front protection degree IP65, NEMA4X, NEMA12

#### MAIN FEATURES

- Available models from a simple indicator up to an advanced analyzer
- Allows the serial re-transmission of the main parameters to a PLC for full control of the system
- Suitable for DIN-rail or panel mounting

### 3-phase voltage and frequency monitoring relays with NFC



#### DPD

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

#### MAIN FEATURES

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

### 3-phase monitoring relay



#### DPA52 / DPB52

- Dimensions 81x17.5x67.2 mm DIN-rail housing
- Phase sequence and phase loss (DPA/DPB), Under/Over Voltage (DPB)
- 3-phase AC (own switching power supply)
- Power supply from 208 V<sub>LL</sub> -40% to 480 V<sub>LL</sub> +30%
- Approvals/Marks: cULus Listed - CCC approved

#### MAIN FEATURES

- Motor protection from reverse running and phase loss
- 17.5 mm width. Suitable for NORM panels.
- Plug and play: no settings needed (DPA), easy setup (DPB)

### Monitoring relays



#### 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

### Monitoring relays



#### DIB71

- Dimensions: 81 x 35.5 x 67.2 mm DINrail housing
- Over or under current monitoring relay 1-phase AC/DC TRMS
- Power supply from 24 to 2380 VAC ( $\pm 15\%$ )
- Approvals/Marks: UL - CSA - CE approved

#### MAIN FEATURES

- Solution to simply monitor overload LED indication for relay, alarm and power supply ON
- 35.5 mm wide housing suitable both for both back and front panel mounting

### 3-phase pumps and ventilators soft starters



#### RSWT

- Motor rating: Up to 45 kW (90 A)
- 3-phase controlled & internally bypassed
- Operational voltage:  
RSWT40: 220 - 400 VAC, RSWT60: 220 - 600 VAC
- PTC input, Alarm - Top of Ramp - Run relay indication
- Approvals/Marks: cULus - CCC - EAC

#### MAIN FEATURES

- Easy to use and set up
- Self-learning algorithm to improve pump starts/stops
- Integrated overload protection (Class 10)

# Our product range

## 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
- Auxiliary relays for top of ramp and alarms
- Serial communication (Modbus 2-wire) [RSGD 75 mm models]
- Approvals/Marks: cULus - CCC - EAC

#### MAIN FEATURES

- Easy to use and set-up
- Self-learning algorithm to adapt to different loads

## Soft starters



### RSBS / RSBS HP

- Current limit starting
- Advanced diagnostic functions
- Internally bypassed
- Up to 12 starts per hour
- Approvals/Marks: cULus listed

#### MAIN FEATURES

- Plug and Play: no external settings needed
- Space saving IP20 design
- Integrated starting capacitor
- Optimised algorithm for high pressure starts (RSBS HP)

## Timers



### HAA08 / HAA14

- 21.5 x 28 mm housing for 8 pin or 14 pin blade socket
- Multifunction timer
- DPDT or 4PDT output
- Universal power supply
- Approvals/Marks: cUR - CSA

#### MAIN FEATURES

- Front knob adjustable time setting
- Selectable time ranges from 0.1 s to 100 h
- Delay on operate/release, ON/OFF first symmetrical recycle, single/double interval on trigger open/close

## Timers



### FMB01

- 48 x 48 mm housing for 11 pin socket or panel mounting
- Multifunction timer with 7 functions
- DPDT output
- Universal power supply
- Approvals/Marks: cUR - CSA

#### MAIN FEATURES

- Front knob adjustable time setting
- Selectable time ranges from 0.05 s to 300 h
- Delay on operate/release, ON/OFF first symmetrical recycle, single/double interval on trigger open/close

## Switching power supplies



### SPD: DIN rail type 5 W...960 W

- DIN-rail housing
- Short circuit and overload protection
- 1-Phase and 3-phase
- Universal supply voltage AC/DC
- Approvals/Marks: cUL listed - TUV/CE

#### MAIN FEATURES

- High efficiency
- LED indicator for DC power on
- Parallel versions available
- Active PFC  $\geq 90$  W
- Class II output  $\leq 90$  W

## Switching power supplies



### SPPC: Enclosed type 25 W...800 W

- Compact dimensions
- Universal input voltage range: 85 VAC ~ 264 VAC / 120 VDC ~ 370 VDC (SPPC150F type)
- 105°C long life electrolytic capacitors
- Adjustable output

#### MAIN FEATURES

- High efficiency and compact size
- DC output: 5, 12, 15, 24 and 48 V
- Built-in active PFC (Power Factor Correction) function: PF  $>0.98$  @ 115 VAC and PF  $> 0.95$  @ 230 VAC (SPPC150F type)

## Digital panel meters



### UDM / LDM40

- Dimensions: 48 x 96 x 105 mm (UDM40); 48 x 96 x 83 mm (LDM40)
- TRMS AC current and voltage measurements
- AC/DC current measurements: selectable full scales (200  $\mu$ A to 5 A)
- AC/DC voltage measurements: selectable full scales (200 mV to 500 V)
- Approvals/Marks: CE - cURus - cCSAus

#### MAIN FEATURES

- Accuracy class 0.1% reading
- UDM40:  $^{\circ}$ C or  $^{\circ}$ F temperature measurements, resistance measurements, rate, speed, frequency and period measurement

## Electromagnetic Safety Interlock



### ESI

- Enhancing safety. Ideal for applications that require access to remain closed and locked until potential hazards have stopped or come to a predetermined safe state.
- Protecting machines from interruptions in production
- Standards compliance. SIL 3 (EN 62061), PL e in accordance with EN ISO 13849-1, interlock type 2 in accordance with EN ISO 14119.
- Approvals by IMQ - CE - cULus.

#### MAIN FEATURES

- Ensure protection in inertia's machineries
- Prevents entry into a dangerous area until the unlock signal
- With manual unlock device for emergency
- Block controlled by solenoid

# Food and Beverage

## Our product range

### CERTUS configurable safety module



#### 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
- CMC configurable memory card slot
- LOG file with 5 configuration modifications
- 24 connectors in 22.5 mm
- Connection with other expansion 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<sub>e</sub>, 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 data and diagnostic modules + bus transfer



#### DDC + CBT

- DDC: Expansion unit for Diagnostics and Data Comm.:
  - C PFBUS - Profibus DP, - C DNET - DeviceNET
  - C CAN - CANOpen, - C EIP - Ethernet IP
  - C ECAT - EtherCAT, - C PFNET - PROFINET
  - C OMMS - Universal Serial Bus
- Bus Transfer: interface module allowing the connection of remote expansions via bus
- DDC: allows communication with most common industrial fieldbus systems

#### MAIN FEATURES

- Bus transfer: up to 100 m for each connection. Maximum 5 CBT expansions. Ideal solution for the interconnection of the safety functions of several machines in a production line

### CERTUS Speed monitoring modules



#### CES

- Expansion 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

### Certus multifunction safety module



#### CM22D0A / CM40D0A / CM30D1A

- Compact dimension, 1 DIN, W x H x D: 18 x 90 x 63 mm.
- Safety solution for basic machines, equipment and production lines
- 4 LEDs on the front panel indicate the status and any errors during operation
- Up to 4 OSSD safety outputs
- Can be used in application with: e-stop, e-gate, limit switch, non-contact switch, safety light curtains, safety light beam, safety mat

#### MAIN FEATURES

- Selectable delay time
- Cat. 4 Ple (ISO 13849-1), SIL 3 (IEC 62061), SILCL 3 (IEC 61508)
- 2 OSSD auxiliary outputs
- Manual or automatic start selectable
- Approval by TUV

### Safety modules



#### NES02D / NES13D / NLG

- Safety modules for gate and emergency stop (NE) and light curtain (NL)
- 2 NO / 3 NO safety Outputs
- IP40 protection for housing and IP20 protection for terminals
- Approvals/Marks: CE - cULus

#### MAIN FEATURES

- Safety category 4
- < 30 ms response time
- Performance Level PL: e in accordance with ISO 13849-1
- Safety Integrity Level SILCL:3 in accordance with IEC 62061



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