CARLO GAVAZZI
Automation Components

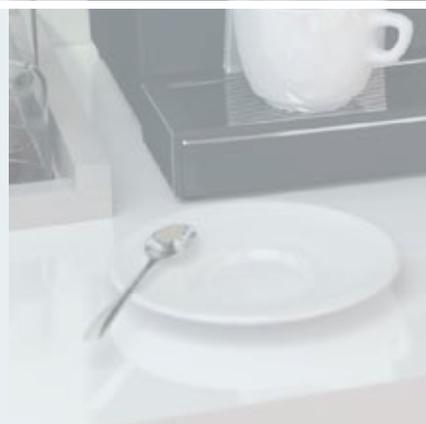CARLO GAVAZZI

Solutions

Food and Beverage

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 include 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 include 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.

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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	DPA51/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 as the sensor may be installed directly in the bottom of the tank.

In addition there is a second solution that 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	Solid state relays	Solid state relays	Solid state contactors	Proportional controllers	Safety magnetic sensors	Photoelectric sensors with IO-Link	Energy analyzers
RF1	RAM1A..G RM1A	RK2 RKD2	RGC1A RGC2A RGC3A	RGC3P RGC2P	MC36	LD30	EM340

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

As global legislation enforces restrictions and bans on the use of mercury Carlo Gavazzi's 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 mounted 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.

In the industrial conveyor oven the LD30 is placed close to a conveyor belt and has two different outputs, which can measure two sizes of food thus regulating the belt speed and consequently the time inside the heating chamber.

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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	ICS08	HAA08 HAA14 FMB01	CD50CNF	CD34CNF	RSWT RSGD	EM340 EM112	UDM 40 LDM 40

Thanks to the progress in energy efficiency, size reduction and low refrigeration 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 include some types suitable to be installed in ice makers. An inductive sensor - specifically designed for this application - detects the low speed of the gear motor, sending a signal to the PC board which stops the ice machine operation.

Carlo Gavazzi photoelectric sensors can also be used for ice level control. The sensor sends a 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 then 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. Additionally RSWT and RSGD soft starters are used to soft start and soft stop high pressure pumps in industrial washing equipment.
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Conveying, filling and cleaning processes

Photoelectric sensors	Photoelectric sensors	Inductive proximity sensors	Cordsets	Capacitive sensors PBT or PTFE with IO-Link	Capacitive sensors AISI316L with IO-Link	Capacitive sensors	Capacitive level sensors
PD30ET	PA18 PH18	ICS12 ICS18 ICS30	CONB14NF CONB54NF	CA18..IO CA30..IO	CA18..IO CA30..IO	CA18CAN/CAF CA30CAN/CAF	CD34CNF

The food industry requires a high level of hygiene and cleanliness in equipment that has to withstand daily wash-downs 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 and 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 are 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.

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Our product range

1-phase solid state relays	1-phase solid state relays	1-phase solid state relays	2-pole 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 - EAC

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

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 V_P blocking voltage

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

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 - EAC

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	1-phase solid state relays	1-phase solid state contactors	3-phase solid state contactors

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 - EAC

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

RGS1A

- Dimensions: 90 x 17.8 x 51 mm, panel mount
- Ratings: up to 660 VAC, 90 AAC, 18,000 A²s
- 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

RGC1A

- Product width 17.5 mm up to 70 mm, DIN or panel mount
- Ratings: up to 660 VAC, 85 AAC, 18,000 A²s
- 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

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

Our product range

3-phase proportional controllers	Photoelectric sensors AISI316L or ABS	Photoelectric sensors AISI316L or ABS with IO-Link	Photoelectric sensors

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

PD30C.. / PD30ET

- Dimensions: 10,8 x 30 x 20 mm
  11 x 31.5 x 21 mm
- Mounting 2 x M3 - 25,4 mm
- Power supply: 10 to 30 VDC
- 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 only for PD30ET)

MAIN FEATURES

- Resistant to high-pressure washdowns, aggressive cleaning agents and disinfectants
- IP67, (IP68, IP69K only for PD30ET), NEMA type 1, (2, 4, 4x, 5, 6, 6P only for PD30ET)
- Protection: reverse polarity, short circuit and transients

LD30C.. / LD30E..

- Background Suppression based on ToF
- Infrared Class 1 Laser
- Selectable: NPN, PNP, Push-Pull, External Input, N.O. and N.C. output
- IO-Link 1.1 with timer, diagnostics and logic functions
- Approvals/Marks: CE - cULus - (ECOLAB only for LD30E)

MAIN FEATURES

- Adjustment: back or top potentiometer
- IP67, (IP68, IP69K only for LD30E) NEMA type 1, (2, 4, 4x, 5, 6, 6P only for LD30E)
- Diagnostics tools: Quality of Run & Quality of Teach, Alarms and transients

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

Photoelectric sensors	Capacitive sensors	Capacitive sensors PBT, AISI316L or PTFE with IO-Link	Capacitive 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

CA18CAN / CAF
CA30CAN / CAF

- Sensing distance: 0.5 - 12 mm (M18), 2 - 30 mm (M30)
- NPN or PNP, 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

- 4th Generation TRIPLESHIELD™ with superior EMC performance
- IP67, IP68 and IP69K, Nema 1, 2, 4, 4X, 5, 6, 6P, 12
- Diagnostic LED indication

CA18..IO / CA30..IO

- Sensing distance: 0.5 - 12 mm (M18), 2 - 30 mm (M30)
- Selectable: NPN, PNP, Push-Pull, External Input, N.O. and N.C. output
- IO-Link 1.1 with timer, diagnostics and logic functions
- IO-Link 1.1 with timer, diagnostics and logic functions
- Approvals/Marks: CE - cULus - ECOLAB

MAIN FEATURES

- 4th Generation TRIPLESHIELD™ with superior EMC performance
- IP67, IP68 and IP69K
- Diagnostics tools: Quality of Run & Quality of Teach, Alarms

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

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Our product range

Capacitive level sensor	Inductive proximity sensors	Inductive proximity sensors	Cordsets

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
- Detects 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

ICS08

- Stainless steel housing M8
- Sensing distance: 2 mm to 4 mm
- Output functions: programmable NO or NC, NPN, PNP or push-pull
- Two meter PVC cable or M8 plug version
- Approvals/Marks: CE - UL - CSA

MAIN FEATURES
- Operating temperature: -25°C to +80°C (-13° to +176°F)
- Adjustable sensing distance and hysteresis and configurable output
- Up to 2 kHz operating frequency
- IO-Link v1.1

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

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	Safety magnetic sensors	Safety magnetic sensors	Multifunction meters

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

CLS / SMS

- Rectangular or cilindrical 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

MC36CH / MC36CM

- Rectangular plastic housing: 36 x 26 x 13 mm
- Assured switching distance (Sao) 5 mm
- Output functions: 2 NO or 1 NO + 1 NC
- 2 meter PVC cable or M8 plug version
- Approvals/Marks: CE - cULus

MAIN FEATURES
- Up to Cat. 4, PL e in accordance with EN ISO 13849-1, with suitable safety module
- Flexibility: left or right exit connection versions
- LED version available for all variants

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-trasmission of the main parameters to a PLC for full control of the system
- Suitable for DIN-rail or panel mounting

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Our product range

1-phase energy analyzzers up to 45A	1-phase energy analyzers up to 100A	3-phase energy analyzers for direct current up to 65A	3-phase monitoring relays

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, 32 A (max 45 A)
- Approvals/Marks: CE - MID (PFA and PFB)

MAIN FEATURES
- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers

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
- Approvals/Marks: CE - MID (PFA and PFB)

MAIN FEATURES
- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers

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_{LL} AC, 65 A
- Approvals/Marks: CE - MID (PFA and PFB)

MAIN FEATURES
- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers

DPA51 / DPA52

- 81 x 17.5 x 67.2 mm; DIN-rail housing
- Phase sequence and phase loss, regenerated voltage detection
- 3 phase AC (own power supply)
- Power supply 208 - 480 VAC
- Approvals/Marks: CE - UL - CSA - CCC

MAIN FEATURES
- Motor protection against reverse running and phase loss
- 1 DIN module width. Suitable for NORM panels
- No setup needed (plug&play)

3-phase voltage relays	AC Current relays	Voltage and current relays	Monitoring relays

DPB51 / DPB52

- 81 x 17.5 x 67.2 mm; DIN-rail housing
- Phase sequence and loss; overvoltage and undervoltage detection + time delay
- 3 phase connection; 3 phase + neutral connection [DPB51]
- Power supply 208-480 VAC
- Approvals/Marks: CE - UL - CCC

MAIN FEATURES
- Complete mains monitoring in a space saving solution
- Neutral loss protection [DPB51]
- Small size for the control panel

DIA53

- 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 A, 50 A or 100 A AC
- Self powered
- Approvals/Marks: CE - cULus - CSA

MAIN FEATURES
- Only 2 wires connection
- Adjustable current tripping setpoint
- Integrated solid state NPN PNP output

DUA01

- 80 x 22.5 x 99.5 mm; DIN-rail housing
- Voltage measurement from 2V to 500V AC/DC
- AC current measurement with MI... and MP... transformers
- Power supply 24-48 VAC/DC; 115/230 VAC
- Approvals/Marks: CE - UL - CSA

MAIN FEATURES
- Safe AC current monitoring thanks to MI and MP avoiding overload consequences
- The relay trips as soon as the monitored value is above the setpoint
- Auxiliary power supply to ensure the relay is always active

DIB71

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

MAIN FEATURES
- Simply solution to monitor oveload, LED indication for relay, alarm and power supply ON
- 35.5 mm wide housing suitable both back and front panel mounting

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Our product range

3-phase pump and ventilator soft starters	3-phase general purpose soft starters	1-phase solid state soft starter for pumps and ventilators

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)

RSGD

- Operational voltage range: 187 - 440 VAC, 187 - 660 VAC
- Operational current range: 12 AAC up 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
- Integrated overload protection (Class 10)

RGTS

- Operational current: up to 25 AAC
- Operational voltage: 110 - 230 VAC 50/60 Hz
- Current reduction vs DOL: up to 45%
- Fully solid state solution
- Approvals/Marks: cULus approved

MAIN FEATURES
- Easy to configure (only 2 settings required)
- Multi-voltage operation
- Panel/DIN rail mount
- QR code for troubleshooting

Multifunction timers	Multifunction timers	Digital panel meters

HAA08 / HAA14

- 28 x 21.5 x 70 mm; for 8 pin or 14 pin blade socket
- Multifunction timer
- DPDT or 4PDT relay output
- Power supply voltage: 24 - 240 V AC/DC
- Approvals/Marks: CE - cUR - CSA

MAIN FEATURES
- Adjustable front dial for time setting
- Selectable time ranges from 0.1 s to 100 h
- Delay on operate, delay on release, ON/OFF first symmetrical recycler, single/double interval on trigger open/close

FMB01

- 48 x 48 x 96.1 mm; for 11 pin socket or panel mounting
- Multifunction timer
- DPDT relay output
- Power supply voltage: 12 - 240 V AC/DC
- Approvals/Marks: CE - cUR - CSA

MAIN FEATURES
- Adjustable front dial for time setting
- Selectable time ranges from 0.05 s to 300 h
- Delay on operate, delay on release, ON/OFF first symmetrical recycle, single/double interval on trigger open/close

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 µA 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: °C or °F temperature measurements, resistance measurements, rate, speed, frequency and period measurement

Our product range

Multifunction safety modules	Multifunction safety modules	Configurable 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
- Approvals/Marks: CE - cULus - TÜV

MAIN FEATURES
- Selectable delay time
- Can be used in application with: e-stop, e-gate, limit switch, non contact switch, safety light curtains, safety light beam and safety mat
- Cat.4, PL e (ISO 13849-1), SIL 3 (IEC 62061), SILcl 3 (IEC 61508)
- 2 OSSD auxiliary outputs
- Selectable manual or automatic start

SMS31

- Dimensions 110,8 x 17,5 x 121,1 mm DIN-rail housing
- Auto, manual or monitored manual start
- 3 NO safety relay outputs
- 1 NC auxiliary relay output
- Detachable screw terminals
- Approvals/Marks: CE - cULus - TÜV

MAIN FEATURES
- Dual channels simultaneity infinite
- Safe monitoring of emergency stops, interlocks, safety magnetic and limit switches
- Front LED's for safety channel diagnosis
- PL e as per ISO EN 13849-1

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
- Approvals/Marks: CE - cULus - TÜV

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)
- Cat.4, PL e (ISO 13849-1), SIL 3 (IEC 62062), SILcl 3 (IEC 61508),

Configurable I/O expansion modules	Data and diagnostic modules + bus transfer	Speed monitoring 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
- Approvals/Marks: CE - cULus - TÜV

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

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
- Approvals/Marks: CE - cULus - TÜV

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

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 to proximity switches (up to 2 proximity switches per module).
- Inputs frequency: Encoder up to 500 KHz (300 KHz for HTL), Proximity up to 5 KHz.
- Approvals/Marks: CE - cULus - TÜV

MAIN FEATURES
- The modules allow configuration of 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

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.

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Our product range

Electromagnetic Safety Interlock	Switching power supplies	Switching power supplies

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 a manual unlock device for emergency
- Block controlled by solenoid

**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 ≥ 90 W
- Class II output ≤ 90 W

**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)

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