

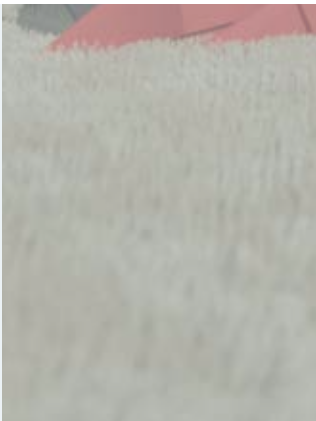


Solutions

Agriculture

Agriculture

Solutions for



Tractors and agricultural machinery

Silos

Feed distribution systems

Irrigation

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 three product lines: Sensors, Switches and Controls.

Our wide array of products include 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

Agricultural mechanization has brought major changes to agriculture and eased the burden on farm workers and advances in tractor technology have made tractors more versatile and suitable for a wider range of farming tasks.

Machinery for ploughing and cultivation have contributed to boosting production. For example special machinery is used to plant seeds and apply fertilizer through mulch at the correct depth and in irrigation, technologies such as micro sprinklers or drip irrigation, which save water and consume less power, are the environmentally friendly solutions for now and the future.

The global agricultural machinery industry also provides more support to smallholders and other farmers with equipment designs and models that suit their needs and those of service providers.

Carlo Gavazzi offers, among other things, a wide range of sensors to measure speed and rotational direction of wheels in farm tractors, harvesting machines etc.

Carlo Gavazzi's capacitive sensors are widely used for level measurements of seed, fodder and liquids in silos and in animal feeding machinery and ultrasonic sensors are mainly used for level measurements of liquids (e.g. milking machinery).

Reliable irrigation systems are highly important for agricultural production. The well proven Dupline® fieldbus with its up-to-the-minute technology, has become known as an extremely user-friendly and flexible fieldbus able to transmit signals over long distances - features that make Dupline® ideal as a fieldbus for irrigation systems.

Finally – thanks to Carlo Gavazzi's wide product range – most agricultural application challenges can be met by one supplier.

Agriculture

Tractors and agricultural machinery



Inductive sensors

ICB12
ICB18
ICB30

Inductive sensors with IO-Link

ICB12..IO
ICB18..IO
ICB30..IO

Capacitive level sensors

CD34CNF

Pick up sensors

PA2PK

Ultrasonic sensors

UA18
UA30

Limit switches

PS

Agricultural machinery needs reliable and durable parts and components able to work long hours in difficult outdoor conditions, exposed to every kind of stress. Carlo Gavazzi offers a comprehensive range of components for most applications in agricultural and earth-moving vehicles, from passive magnetic pick up sensors (PA2PK) to inductive proximity sensors.

The pick up sensors detect and measure the speed of phonic or toothed wheels and generally of any rotating device built in a ferromagnetic material and provided with slots and cogs, for example in engines and in tractors.

Inductive sensors are used for non-contact measurements - for example to count revolutions of the axle in machinery or to

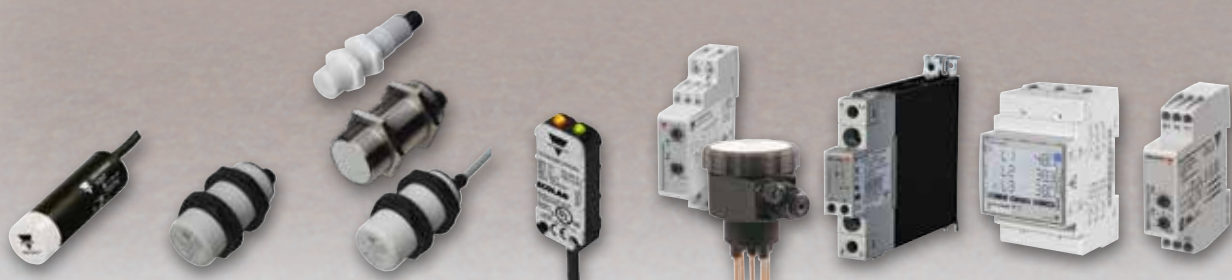
monitor the bucket position in a backhoe loader. The IO-Link ICB inductive sensors allow easy exchange of process data, remote configurations and events with simple and inexpensive 3-wire cabling, without needing to change the existing architecture. The ICB series, available from M12 to M30, can be completely configured to enable new functionalities such as the divider and speed control functions.

Safety and positional mechanical switches in different versions and configurations are also available. Capacitive level sensors (CD34CNF series) mounted outside plastic tanks, can detect the level of water-based chemicals while ignoring foam, film or build-up.

Ultrasonic sensors (UA series) are also used to monitor sprayer heights in self-propelled row-crop sprayers. A particular application of ultrasonic sensors with analog output is the control of the driving direction of the wagon or a motorized chassis equipped with one or more fixed or mobile platforms, for example for harvesting fruit.



Silos



Capacitive sensors	Capacitive sensors	Capacitive sensors with IO-Link	Capacitive level sensors	Conductive level controllers / probes	1-phase solid state switches	Energy analysers	Timers
CB32 VC11/12	CA30CAN/CAF CA18CAN/CAF EC30	CA18..IO CA30..IO	CD34CNF	CLD CLP CLH	RGC1 RGS1	EM340 EM24	DAA51 DMB51

Carlo Gavazzi offers very efficient means for liquid and solid level measurement, both in large silos and in small storage containers. Our 4th generation TRIPLESIELD™ capacitive sensors are designed to detect objects with a dielectric constant (DC) of as low as 1.5.



The CA18 and CA30 CAN/CAF sensors are excellent for accurate measurement of dry grain regardless of its degree of humidity. The sensor provides a stable and precise signal of yield per unit area. Knowing these areas makes it easy to adjust the amount of fertilizers and herbicides in exactly the right way. As a result, cost can be reduced and the environmental impact minimized. The capacitive sensors EC30 (AC version) have a long sensing distance that allows easy detection of the grain. The VC11/12 sensors are available in multivoltage power supplies with relay outputs and used in many

agricultural applications. The conductive level program by Carlo Gavazzi comprises of a complete range of intelligent conductive level controllers for liquids such as in slurry tanks (CL-series) and the CLH electrode probes (3 or 5 electrodes). Various adjustment possibilities enable the controller to perform filling operations, emptying operations or a combination of the two.

Agriculture

Feed distribution systems



Magnetic sensors	Capacitive sensors with IO-Link	Capacitive sensors	Photoelectric sensors with IO-Link	Photoelectric sensors	Inductive sensors	1 & 3-phase proportional controllers	Soft starters	3-phase voltage relay
S series	CA18..IO CA30..IO	VC11/12 CB32	LD30	PD30ET PA18/PH18	ICS12 ICS18 ICS30	RGC1P RGC2P RGC3P	RSGD RSBT	DPB52

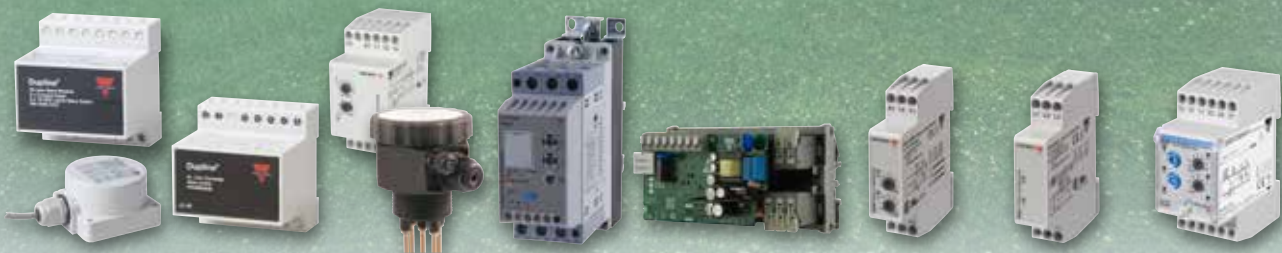
Feeding distribution systems are critical to the quality and safety of farms with pig, poultry and dairy sectors. It is important to feed all the chickens at the same time and manual handling is eliminated. The distribution is controlled by sensors (capacitive, inductive, photoelectric), normally combined with solid state relays



and soft starters. IO-Link sensors can be used to remotely change parameters in the sensor to adapt to different feeds. The capacitive level sensors with IO-link are suitable for this application as they provide easy diagnostic and setting, increasing up-time of the feeding systems. Thanks to their advanced settings it is possible to detect the type of feed, preventing faults that might occur when the feed supplier changes. The VC11/12 sensors are able to directly drive a contactor or a small motor. The LD30 sensor can be used to directly detect the cow or pig when it enters the feeding station. The LD30 and PD30 stainless steel sensors work perfectly even in

the harshest environments. The high-quality stainless steel housing guarantees maximum mechanical resistance, and prescribed cleaning schedules are smoothly met without costly machine downtime. Ultrasonic sensors or capacitive sensors control the levels in the silos and monitor emptying to ensure the efficiency of the process. Carlo Gavazzi soft starters (RSGD) soft start and soft stop pumps, screw feeders, ventilators as well as chillers (RSBT). Temperature control in animal farms is optimised with the RGC1P proportional controller which, through an analog input, regulates the power of heating lamps. The RGC3P (in special version) is used for optimal speed control of ventilators in egg incubators.

Irrigation



Dupline® digital I/O modules	Dupline® converters	Conductive level controllers / probes	3-phase pump and ventilators soft starters	1-phase dynamic starter for submersible pumps	Timers	Monitoring relays	Earth leakage relays
GH3440 4412 GH6440 4412	GH3485 0000	CLD CLP CLH	RSWT	HDMS	DAA51 DMB51	DPA51 DPB52	DEA71 DEB71

Traditional irrigation systems are characterized by complex and expensive wiring. The Carlo Gavazzi Dupline® irrigation bus reduces installation costs and increases flexibility in agricultural irrigation systems, where the valves are usually distributed over a large area. Any type of irrigation controller, whether it is a PLC, PC or dedicated controller, can use Dupline® as a remote I/O system. The wiring topology is completely free, with no limitation to the number and length of branches. The Dupline® Fieldbus is the ideal system to control levels, monitor pumps and activate valves over a large area and from a distance. The RSWT soft starter series is a 3-phase soft starter designed to limit the starting current and water hammering in centrifugal

pumps. Minimal settings and a compact design facilitates the replacement of star-delta and mechanical contactors. The RSWT's self learning algorithm ensures that the pump starts with optimal settings even under different load conditions. The HDMS is a single phase dynamic motor soft starter for borehole pumps. The innovative HDMS algorithm (patent pending) is designed to reduce the start current by 70% with respect to a direct on line start resulting in less disturbances to generators or weak voltage grids. With HDMS the start capacitor is no longer required as it generates sufficient starting torque through a unique algorithm using IGBTs. The DEA71 and DEB71 protect electric installations against the risk of fire or

electrocution due to current leaks. They are ideal for protection of pumps, submersible pumps and motors. They detect insulation and/or grounding failure via the external core balance current transformer (CTG), provide a warning signal at 60% and trip the MCB when the fault current exceeds the preset fault current.



Agriculture

Our product range

Capacitive sensors PBT, AISI316L or PTFE with IO-Link



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
- Approvals/Marks: CE - cULus - ECOLAB

MAIN FEATURES

- 4th Generation TRIPLESIELD™ with superior EMC performance
- IP67, IP68 and IP69K
- Diagnostics tools: Quality of Run & Quality of Teach and Alarms
- Housing material: PBT, PTFE or Stainless Steel

Capacitive sensors



CA18CAN/CAF CA30CAN/CAF

- Dimensions: M18 / M30
- Plastic housings, DC versions
- Adjustable sensing distance up to 20 mm flush and 30 mm non-flush
- Protection: short circuit, transient and reverse polarity
- Degree of protection: IP67, IP68 and IP69K
- Approvals/Marks: CE - cULus - Ecolab

MAIN FEATURES

- 4th generation TRIPLESIELD™ technology
- Dust and humidity compensation
- Dust and temperature alarm outputs
- Increased temperature stability
- Sensing face can withstand temperatures up to 120°C

Capacitive sensors



CA30CLN

- Level sensor for solid, fluid or granulated substances
- Dimensions: M30
- Adjustable sensing distance: 4-12 mm
- Thermoplastic polyester housing
- Multi voltage supply 20.4 to 255 VAC/DC
- Approvals/Marks: CE - cULus

MAIN FEATURES

- Available with/without built-in time delay
- Dust and humidity compensation
- Rear side with integrated trimmer shaft
- Laser printing of main specifications on the sensor's surface

Capacitive sensors



VC11/12

- Capacitive level sensors for solid, liquid or granulated substances
- Dimensions: Ø32
- Adjustable sensing distance: 4-12 mm
- Multivoltage supply: 20.4 to 255 VAC/DC
- Approvals/Marks: CE - cULus

MAIN FEATURES

- New back-part with integrated trimmer shafts
- SPDT relay output
- Time delay on operate or release

Capacitive sensors ATEX version



CB32

- TRIPLESIELD™ sensor protection
- Adjustable sensing distance: 4-20 mm
- Dimensions: Ø32
- Capacitive level sensors for solid, fluid or granulated substances
- Protection transients and reverse polarity
- Approvals/Marks: CE

MAIN FEATURES

- Approved acc. to ATEX directive for operation in potentially explosive dust
- Relay output
- With or without adjustable time delay

Capacitive sensors



CA18CL

- TRIPLESIELD™ sensor protection
- Sensing distance: 0.5-12 mm (M18)
- Plastic housing, AC versions
- Automatic detection of NPN or PNP load
- Selectable "make or break" switching by means of Teach function
- Approvals/Marks: CE - UL - CSA

MAIN FEATURES

- Teach-in of sensing distance via push-button or COM-input
- Humidity compensation
- Protection: short circuit, transients and reverse polarity

Capacitive sensors



EC30

- TRIPLESIELD™ sensor protection
- Sensing distance up to 25 mm
- Dimensions: M30
- Plastic housing, AC versions
- Approvals/Marks: CE - UL - CSA

MAIN FEATURES

- Detection of substances/foodstuff e.g., corn or feed
- Sensing face can withstand temperatures up to 120°C
- Protection: short circuit, transients and reverse polarity

Capacitive level sensor



CD34CNF

- Dimensions 8 x 16 x 34 mm
- Power supply: 10-30 VDC
- 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 adaptation to tank wall thickness
- Eliminates influence from build-up or foam
- IP65, 66, 67, 68, 69K NEMA type 1, 2, 4, 4X, 5, 12
- Protection: reverse polarity, short circuit and transients

Our product range

Photoelectric sensors AISI316L or ABS with IO-Link



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

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 and aggressive cleaning agents.
- IP67, IP68, IP69K, NEMA type 1, 2, 4, 4x, 5, 6, 6P
- 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
- Sensing types: Diffuse reflective, BGS, Pol. Retro-reflective, Through beam
- Sensitivity adjustment by potentiometer
- Approvals/Marks: CE - cULus

MAIN FEATURES

- IP69K / ECOLAB approved / CE marking / cULus approved acc. to UL508
- Diagnostic LED indication (green and yellow LED)
- Short circuit, reverse polarity and overload protection

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

MAIN FEATURES

- IP69K / ECOLAB approved / CE-marking / cULus approved acc. to UL508
- Diagnostic LED indication (green and yellow LED)
- Short circuit, reverse polarity and overload protection

Pick up sensors



PA2PK

- Dimensions: diameter M20 x 1.5 length 60, 70, 107 mm
- Pulse output function
- Cylindrical nylon with 30% glass fiber
- Protection degree IP65
- Approvals/Marks: CE

MAIN FEATURES

- AMP connector Superseal
- Suitable for applications where the measurement of gear speed is required
- Operating frequency > 100 Hz

Ultrasonic sensors



UA18 / UA30

- Dimensions: M18, M30
- Ultrasonic sensors with an integrated amplifier providing a digital and/or analog output and integrated amplifier
- Up to 6 m sensing distance
- Switching output with two setpoints
- Housing material: plastic or AISI316L stainless steel
- Approvals/Marks: CE - cULus - CSA

MAIN FEATURES

- Excellent EMC performance and precision
- Detects clear, transparent and shiny targets, solid objects, liquid or granules
- Protection: short circuit, transients and reverse polarity

Conductive level controllers / probes



CLD / CLP / CLH

- 17.5 mm slim housing, 22.5 mm & 35 mm housing available
- Multiple filling and emptying functions
- 24-240 VAC/DC [CLD2EB1BU24]/24 VDC, 115 VAC, 230 VAC
- Flexible modular probes up to 5 electrodes [CLH5]
- Extendible probes for longer length

MAIN FEATURES

- Wide operational supply voltage range
- Slim compact housing
- Wide sensitivity adjustment 250 Ω to 500 KΩ
- Cascading amplifiers for more levels [CLP2FA]

Smart configurator for IO-Link sensors



SCTL55





- Handheld device for IO-Link sensors
- 5.5" HD touch screen display
- Automatic IODD file download via Wi-Fi
- High capacity rechargeable battery
- M8 3-wire, M8 4-wire and M12 connectors
- Approvals/Marks: CE, FCC, IC
- IO-Link v1.1

MAIN FEATURES

- Intuitive GUI with dedicated App for a simplified user experience.
- Access to an advanced diagnostic with the possibility to verify operating hours, number of detections, operating cycles, alarms and the quality of run of the sensor connected.
- Easy management of operating parameters such as switchpoint mode, logic and timing functions, sensing distance, output configuration (PNP/NPN/push-pull, NO/NC)

Agriculture

Our product range

Inductive sensors with IO-Link	Inductive sensors	Inductive sensors	Magnetic sensors
			
ICB12..IO / ICB18..IO / ICB30..IO	ICB12 / ICB18 / ICB30	ICS12 / ICS18 / ICS30	S series
<ul style="list-style-type: none"> Nickel-plated brass M12, M18 or M30 cylindrical threaded barrel housings Sensing distance from 4 mm to 22 mm Output functions: programmable NO or NC, NPN, PNP or push-pull 2 meter oil resistant PVC cable or M12 plug version Approvals/Marks: CE, cULus IO-Link V1.1 	<ul style="list-style-type: none"> M12, M18 and M30 Nickel-brass housing in short or long barrel lengths Standard, double and triple distance sensing ranges 3-wire and 4-wire versions Two metre oil resistant PVC cable or M12 plug version Approvals/Marks: CE - cULus - cCSAus 	<ul style="list-style-type: none"> M12, M18 and M30 stainless steel housing Sensing distance from 2 mm up to 22 mm Degree of protection: IP67, IP68 and IP69K Approvals/Marks: CE - cULus - cCSAus - ECOLAB 	<ul style="list-style-type: none"> Type: rectangular plastic housing Dimensions: 79 x 21.2 x 11.5 mm Side operated Operating temperature -25°C to 75°C Protection degree IP67
MAIN FEATURES <ul style="list-style-type: none"> Operating temperature: -25°C to +70°C (-13° to +158°F), and -40°C to +70°C (-40° to +158°F) for M12-plug version Adjustable sensing distance and hysteresis and configurable output Up to 2 kHz operating frequency 	MAIN FEATURES <ul style="list-style-type: none"> High precision and reliability thanks to the microprocessor technology Short circuit and overload LED indication Laser engraved information on the front cap, permanently legible 	MAIN FEATURES <ul style="list-style-type: none"> Certified compatibility with most of the detergents and disinfectants available on the market Short circuit and overload LED indication Extended temperature range: -40°C to +80°C (-40°C to +85°C for ICS30) 	MAIN FEATURES <ul style="list-style-type: none"> Several operating distances thanks to the wide range of magnetic units [CL series] Easy and fast mounting
1-phase solid state switches	1 and 3-phase proportional controllers	3-phase scroll compressor soft starters	3-phase general purpose soft starters

			
RGS1 / RGC1	RGC1P / RGC2P / RGC3P	RSBD / RSBT	RSGD
<ul style="list-style-type: none"> Product width: 17.5 mm up to 70 mm, DIN-rail or panel mount Ratings: up to 660 VAC, 90 AAC, 18000 A²s Integrated output overvoltage protection Control input ranges: 4-32 VDC, 20-275 VAC (24-190 VDC) Approvals/Marks: CE - EAC - cULus [RGC] - UR [RGS] - CSA [RGS] - VDE - GL [RGC] up to 30 AAC 	<ul style="list-style-type: none"> Product width: 35 mm up to 70 mm, DIN or panel mount 1-phase with heatsink [RGC1P] or for panel mount [RGS1P], 3-phase with heatsink [RGC2P, RGC3P] Ratings: up to 660 VAC, 90 A (1-phase), 75 A/pole (2-phase), 65 A/pole (3-phase) Control input: 0-20 mA, 4-20 mA, 12-20 mA, 0-10 VDC, 0-5 VDC, 1-5 VDC Approvals/Marks: CE - EAC - cULus - UR [RGS1P] - CSA [RGS1P] - CCC [RGC2P, RGC3P] 	<ul style="list-style-type: none"> Enhanced current reduction capability with patented auto-adaptive algorithm Motor rating: 3-phase up to 45 kW @ 400 V Integrated diagnostic functions 2- and 3-phase controlled solutions Approvals/Marks: cUL listed 	<ul style="list-style-type: none"> 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 75 mm models] Approvals/Marks: cULus - CCC - EAC
MAIN FEATURES <ul style="list-style-type: none"> Integrated heatsink [RGC] or without heatsink [RGS] 100 kA short circuit current rating Optional over temperature protection [RGC] 	MAIN FEATURES <ul style="list-style-type: none"> Selectable switching modes Integrated overvoltage protection Monitoring for SSR and load circuit malfunctions [RGC2P, RGC3P] 	MAIN FEATURES <ul style="list-style-type: none"> Plug and play: no user settings required Typically > 50% scroll compressor inrush current reduction Internally bypassed and internally supplied 	MAIN FEATURES <ul style="list-style-type: none"> Easy to use and set-up Self-learning algorithm to adapt to different loads Auxiliary relays for top of ramp and alarms

Our product range

1-phase dynamic starter for submersible pumps



HDMS

- Operational current: Up to 37 AAC
- Operational voltage: 110 - 230 VAC 50/60 Hz
- Current reduction vs DOL: Up to 75%
- Compliant with residential (Class B) limits for emissions
- Approvals/Marks: cULus approved

MAIN FEATURES

- No need for a start capacitor
- Self-learning algorithm - plug and play
- Plug and play: no user settings required
- Modbus RTU over RS485 serial communication
- NFC technology for data download of 32 starts

1-phase solid state soft starter for pumps and ventilators



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

3-phase 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 setup
- Self-learning algorithm to improve pump starts/stops
- Integrated overload protection (Class 10)

Variable frequency drives



RVLF

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

3-phase monitoring relays



DPA51

- 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 from reverse running and phase loss
- 1 DIN module width. Suitable for NORM panels
- No setup needed (plug&play)

AC Current relays



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 AAC
- Self powered
- Approvals/Marks: CE - cULus - CSA

MAIN FEATURES

- Only 2 wire connection
- Adjustable current tripping setpoint
- Integrated solid state NPN PNP output

3-phase voltage relays



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 - cULus - CCC

MAIN FEATURES

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

Current monitoring relays



DIB02 / PIB02

- 80 x 22.5 x 99.5 mm; DIN-rail housing [DPB02] or 80 x 36 x 94 mm; Plug-in housing [PPB02]
- Over or under current relay
- Adjustable time delay
- Power supply from 24 to 48 VAC/DC or 115/230 VAC
- Approvals/Marks: CE - cULus

MAIN FEATURES

- DC or AC current measurement
- 3-phase overcurrent measurement with MP3 current transformer
- DC current measurement by means of an external shunt

Agriculture

Our product range

Earth leakage protection relays



DEA71

- 81 x 35.5 x 67.2 mm; DIN-rail housing
- 2 SPDT 5 A relay outputs
- LED leakage Level indicator
- Power supply 24 - 240 VAC
- CE (IEC EN 60947-2 Annex M compliant), cULus

MAIN FEATURES

- Fixed Trip Current Setting
- Remote Test / Reset push button input
- Warning Indication and output

Earth leakage protection relays



DEB71

- 81 x 35.5 x 67.2 mm; DIN-rail housing
- 2 SPDT 5 A relay outputs
- LED leakage Level indicator
- Power supply 24 - 240 VAC
- CE (IEC EN 60947-2 Annex M compliant), cULus

MAIN FEATURES

- Fixed Trip Current Setting
- Remote Test / Reset push button input
- Warning Indication and output

Core balance current transformers



CTG

- 6 Sizes from 35 mm to 210 mm
- Solid round core type
- Screw terminals connection
- Approvals/Marks: CE (IEC EN 60947-2 Annex M compliant) - cULus

MAIN FEATURES

- 1:1000 current reduction ratio
- Single and three phase

Current transformers



E83

- 95 x 67.5 x 20 mm; 27 mm hole for current measurement
- 25 A to 500A AC inputs
- Output 4-20 mA, 0-20 mA, 0-10V DC
- Approvals/Marks: CE - UL

MAIN FEATURES

- Easy PLC interfacing
- True RMS measurement
- Load status information to the PLC

Current transformers



CTD / TADK

- CTD: currents from 40 to 4000 A
- TADK2: 1-250 A
- Removable panel fixing clips
- DIN-rail and panel mounting facility
- Double screw terminals [CTD]
- Sealable covers
- Case: ABS, self-extinguishing level UL 94 V-0
- Accuracy class: 0.5

MAIN FEATURES

- Wound primary / solid core or split-core
- Compliance with IEC 60185, VDE 0414-1 regulations
- Removable DIN-rail mounting holder

Timers



DAA51 / DMB51

- 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%
- CE, UL, CSA, RINA [DMB51]

MAIN FEATURES

- Wide range of timing functions [DMB51]
- Timing range 0.1 s to 100 h
- 5 A SPDT relay

Multifunction timers



FMB01 / FAA

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

MAIN FEATURES

- Adjustable time setting via front dial
- 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

3-phase power transducers



CPT

- Dimensions: 83.5 x 45 x 98.5 mm DIN-rail housing
- Accuracy 0.5 % (voltage, current)
- Measurement by CT and VT
- Front protection degree IP20
- Analogue, digital, pulse or serial outputs available

MAIN FEATURES

- Compact size power transducer
- Provides electrical variables set to a PLC to manage compressors and other loads
- Suitable for on-board panel installation

Our product range

3-phase energy analysers 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, 3x 8-digit, cl. B (EN50470)
- Measuring inputs: 230 to 400 V_U 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

3-phase energy analysers



EM24

- 3-phase energy analyser with direct connection
- Direct connection up to 65 A or by CT
- Dimensions: 4-DIN-rail module housings Class B (EN50470)
- Pulse open collector output
- Optional serial port (Modbus RS485 or TCP, M-bus wired or wireless and Dupline®), digital input and outputs

MAIN FEATURES

- Direct measurement in a very compact housing to save space
- Suitable for measuring generated and consumed energy
- On request, MID annex D certification available
- M-bus port integrated in the meter without external gateways

Dupline® digital I/O modules



GH3440 4412

- Module for controlling 3-wire latching valves
- 2 outputs to open and close the valve
- 2 inputs for e.g., pulse counting, tamper switch or status feedback
- Supplied by bus - no external power needed

MAIN FEATURES

- Built-in microcontroller for correct coil-pulsing and charge monitoring
- Valve closes in case of bus fault

Dupline® valve controls



GH6440 4412

- Module for controlling 3-wire latching valves
- 2 outputs for open and close the valve
- 2 inputs for e.g. pulse counting, tamper switch or status feedback
- Built-in charge capacitor, gas arrestor and microcontroller

MAIN FEATURES

- Can be buried in the ground at the actual valve position
- Supplied by bus – no external power needed

Dupline® converters



GH3485 0000

- Generates 28 V Hi-Line signal
- Supplies and controls up to 64 valve I/O modules over two wires
- LED-indications for Dupline® carrier, Hi-Line carrier and supply

MAIN FEATURES

- Built-in Gas-arrestor for lightning protection
- Up to 7 km transmission distance

Dupline® test units



GHTU8

- Portable test unit
- 12 key tactile keyboard
- Dual group reading
- Analog BCD reading

MAIN FEATURES

- Monitoring of Hi-line channel status with LCD display
- Designed as part of the Dupline® irrigation concept

DIN-rail switch mode power supplies



SPD

- Output power 5 W to 480 W
- Input 110/240 VAC 1-phase and DC
- Short circuit, overload and overvoltage protection
- PFC > 100 W
- Approvals/Marks: CE - cULus - cURus - UL1310 Class 2 (up to 90W) - ISA 12.12.1 Class I Div2 - TÜV - CCC

MAIN FEATURES

- DC OK signal
- Parallel connection feature
- Screw, spring or detachable terminal connectors

Compact DIN-rail power supplies



SPDM

- Output power 30 W to 240 W
- Universal input range of 110-240 VAC, or up to 370 VDC
- Short circuit, overload, overvoltage and over temperature protection
- Compact dimension
- Approvals/Marks: CE - cULus (all except 240 W) - cURus (only 120 W) - UL1310 Class 2 (up to 72 W, for 72 W only for 24 VDC models)

MAIN FEATURES

- Saves up to 20% panel space
- High efficiency and wide operating temperature
- Screw or spring terminal connectors

Agriculture

Our product range

Low profile DIN-rail power supplies



SPMA

- Compact DIN rail low profile enclosure
- Universal input 85-264 VAC / 120-350 VDC
- Output powers from 12 W (1DIN) to 100.8 W (4DIN)
- Output options of 5 VDC, 12 VDC, 15 VDC or 24 VDC
- Approvals/Marks: CE, cULus, cURus 62368-1, UL1310

MAIN FEATURES

- 4 kVAC isolation voltage
- Overvoltage, Overload and Short circuit output
- High efficiency (up to 89%)

Metal enclosed power supplies



SPPC

- Output power from 15 W to 800 W
- Universal input range of 110-240 VAC
- Short circuit, overload and over voltage protection
- PFC function available >75 W
- Approvals/Marks: CE - cURus

MAIN FEATURES

- Adjustable output $\pm 10\%$
- Compact dimensions
- Wide operating temperature range up to 70°C

DC UPS



SPUC / SPUBC

- Power supply, UPS and battery charger "All in one" [SPUBC], UPS controller [SPUC]
- 12 or 24 VDC 5 A output (up to 30 A SPUC)
- Power boost up to 2 times rated output, permanent [SPUBC]
- Built-in battery status, complete diagnosis [SPUBC]
- Approvals/Marks: CE - cURus (all) - cULus (SPUC only) - TÜV (SPUC only)

MAIN FEATURES

- Power supply independent from charger [SPUBC], to be used in addition to 12 or 24 V power supply [SPUC]
- Remote indication for battery operation and battery low
- "Start from battery" and "Empty battery charging" features [SPUBC]

Industrial relay



RSLM

- SPST or SPDT option
- Contact rating for 6 A, 250 VAC / 30 VDC
- Coil voltage of 12 VDC to 60 VDC
- Built-in battery diagnosis
- Approvals/Marks: VDE - CQC - cURus - CSA

MAIN FEATURES

- Ultra slim, 5 mm width
- DIN-rail mount [ZRLS socket] or PCB mount [ZRLP]
- Surge voltage of up to 6 kV

Limit switches



PS

- Material: plastic, metal
- Horizontal / vertical control available
- Minimum actuation force / torque
- Approvals/Marks: CE - UL - CSA

MAIN FEATURES

- Mechanical life > 15,000,000 cycles
- Precise operating point

OUR SALES NETWORK IN EUROPE

AUSTRIA

Carlo Gavazzi GmbH
Ketzergasse 374,
A-1230 Wien
Tel: +43 1 888 4112
Fax: +43 1 889 10 53
office@carlogavazzi.at

BELGIUM

Carlo Gavazzi NV/SA
Mechelsesteenweg 311,
B-1800 Vilvoorde
Tel: +32 2 257 4120
Fax: +32 2 257 41 25
sales@carlogavazzi.be

DENMARK

Carlo Gavazzi Handel A/S
Over Hadstenvej 40,
DK-8370 Hadsten
Tel: +45 89 60 6100
Fax: +45 86 98 15 30
handel@gavazzi.dk

FINLAND

Carlo Gavazzi OY AB
Ahventie, 4 B
FI-02170 Espoo
Tel: +358 9 756 2000
myynti@gavazzi.fi

FRANCE

Carlo Gavazzi Sarl
Zac de Paris Nord II, 69, rue de la Belle Etoile,
F-95956 Roissy CDG Cedex
Tel: +33 1 49 38 98 60
Fax: +33 1 48 63 27 43
french.team@carlogavazzi.fr

GERMANY

Carlo Gavazzi GmbH
Pfnorstr. 10-14
D-64293 Darmstadt
Tel: +49 6151 81000
Fax: +49 6151 81 00 40
info@gavazzi.de

GREAT BRITAIN

Carlo Gavazzi UK Ltd
4.4 Frimley Business Park,
Frimley, Camberley, Surrey GU16 7SG
Tel: +44 1 276 854 110
Fax: +44 1 276 682 140
sales@carlogavazzi.co.uk

ITALY

Carlo Gavazzi SpA
Via Milano 13,
I-20045 Lainate
Tel: +39 02 931 761
Fax: +39 02 931 763 01
info@gavazziacbu.it

NETHERLANDS

Carlo Gavazzi BV
Wijkermeerweg 23,
NL-1948 NT Beverwijk
Tel: +31 251 22 9345
Fax: +31 251 22 60 55
info@carlogavazzi.nl

NORWAY

Carlo Gavazzi AS
Melkeveien 13,
N-3919 Porsgrunn
Tel: +47 35 93 0800
Fax: +47 35 93 08 01
post@gavazzi.no

PORTUGAL

Carlo Gavazzi Lda
Rua dos Jerónimos 38-B,
P-1400-212 Lisboa
Tel: +351 21 361 7060
Fax: +351 21 362 13 73
carlogavazzi@carlogavazzi.pt

SPAIN

Carlo Gavazzi SA
Avda. Iparraguirre, 80-82,
E-48940 Leioa (Bizkaia)
Tel: +34 94 480 4037
Fax: +34 94 431 6081
gavazzi@gavazzi.es

SWEDEN

Carlo Gavazzi AB
V:a Kyrkogatan 1,
S-652 24 Karlstad
Tel: +46 54 85 1125
Fax: +46 54 85 11 77
info@carlogavazzi.se

SWITZERLAND

Carlo Gavazzi AG
Verkauf Schweiz/Vente Suisse
Sumpfstrasse 3,
CH-6312 Steinhausen
Tel: +41 41 747 4535
Fax: +41 41 740 45 40
info@carlogavazzi.ch

OUR SALES NETWORK IN THE AMERICAS

USA

Carlo Gavazzi Inc.
750 Hastings Lane,
Buffalo Grove, IL 60089, USA
Tel: +1 847 465 6100
Fax: +1 847 465 7373
sales@carlogavazzi.com

CANADA

Carlo Gavazzi Inc.
2660 Meadowvale Boulevard,
Mississauga, ON L5N 6M6, Canada
Tel: +1 905 542 0979
Fax: +1 905 542 22 48
gavazzi@carlogavazzi.com

MEXICO

Carlo Gavazzi Mexico S.A. de C.V.
Circuito Puericultores 22, Ciudad Satelite
Naucalpan de Juarez, Edo Mex. CP 53100
Mexico
T +52 55 5373 7042
F +52 55 5373 7042
mexicosales@carlogavazzi.com

BRAZIL

Carlo Gavazzi Automação Ltda. Av.
Francisco Matarazzo, 1752
Conj 2108 - Barra Funda - São Paulo/SP
Tel: +55 11 3052 0832
Fax: +55 11 3057 1753
info@carlogavazzi.com.br

OUR SALES NETWORK IN ASIA AND PACIFIC

SINGAPORE

Carlo Gavazzi Automation Singapore Pte. Ltd.
61 Tai Seng Avenue #05-06
Print Media Hub @ Paya Lebar iPark
Singapore 534167
Tel: +65 67 466 990
Fax: +65 67 461 980
info@carlogavazzi.com.sg

MALAYSIA

Carlo Gavazzi Automation (M) SDN. BHD.
D12-06-G, Block D12,
Pusat Perdagangan Dana 1,
Jalan PJU 1A/46, 47301 Petaling Jaya,
Selangor, Malaysia.
Tel: +60 3 7842 7299
Fax: +60 3 7842 7399
info@gavazzi-asia.com

CHINA

Carlo Gavazzi Automation
(China) Co. Ltd.
Unit 2308, 23/F.,
News Building, Block 1, 1002
Middle Shennan Zhong Road,
Shenzhen, China
Tel: +86 755 83699500
Fax: +86 755 83699300
sales@carlogavazzi.cn

HONG KONG

Carlo Gavazzi Automation
Hong Kong Ltd.
Unit No. 16 on 25th Floor, One Midtown,
No. 11 Hoi Shing Road, Tsuen Wan,
New Territories, Hong Kong
Tel: +852 26261332 / 26261333
Fax: +852 26261316

OUR COMPETENCE CENTRES AND PRODUCTION SITES

DENMARK

Carlo Gavazzi Industri A/S
Hadsten

MALTA

Carlo Gavazzi Ltd
Zejtun

ITALY

Carlo Gavazzi Controls SpA
Belluno

LITHUANIA

Uab Carlo Gavazzi Industri Kaunas
Kaunas

CHINA

Carlo Gavazzi Automation (Kunshan) Co., Ltd.
Kunshan

HEADQUARTERS

Carlo Gavazzi Automation SpA
Via Milano, 13
I-20045 - Lainate (MI) - ITALY
Tel: +39 02 931 761
info@gavazziautomation.com



CARLO GAVAZZI
Automation Components

Energy to Components!

www.gavazziautomation.com

