

**CARLO GAVAZZI**  
Automation Components

**80**  
**CARLO GAVAZZI**  
1931-2011

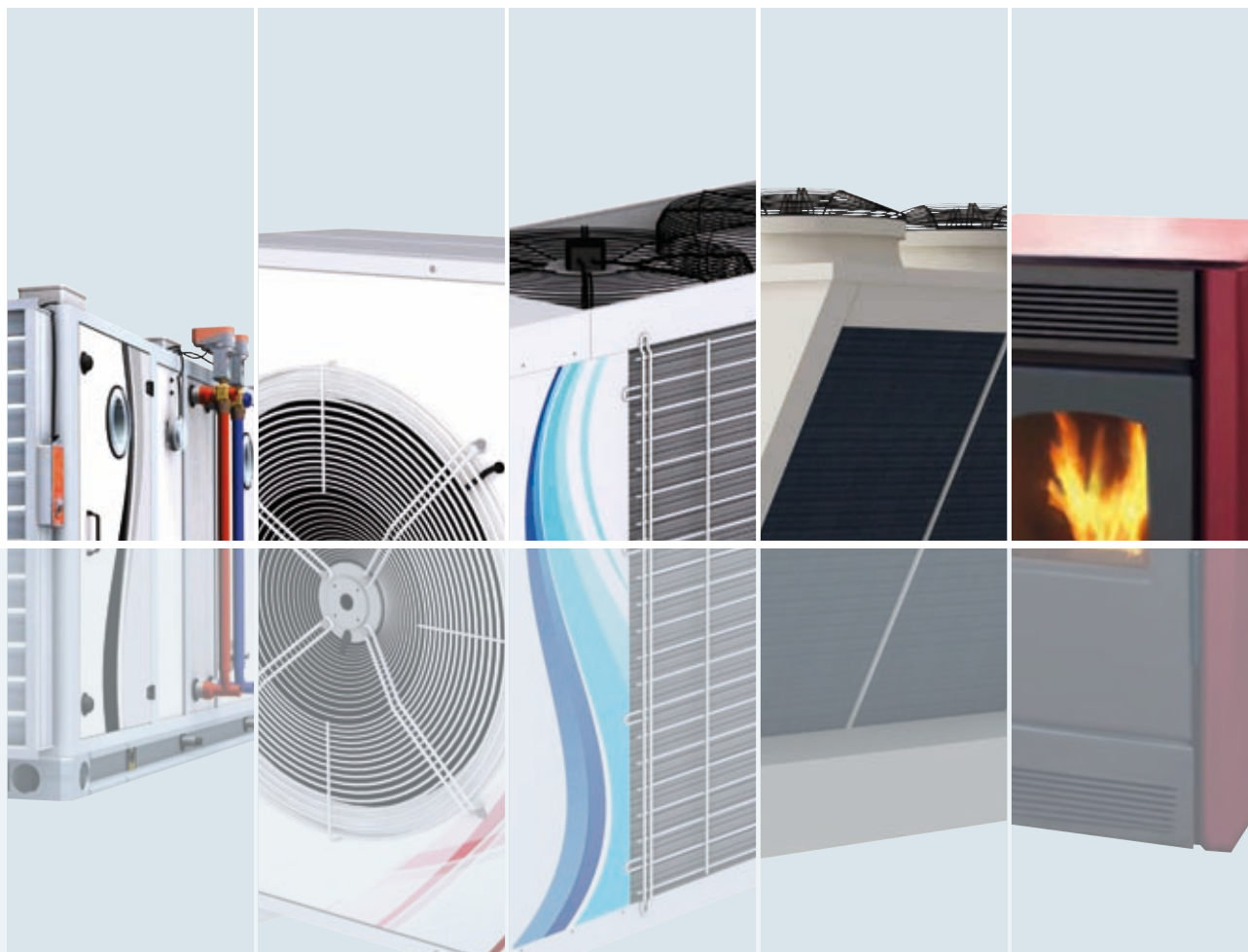


## **Building Automation**

**Solutions for**  
**HVAC systems**

# HVAC systems

## Solutions for



**Air Handling Units**

**Heat pumps**

**Chillers**

**Roof Tops**

**Pellet Burners**

### ABOUT CARLO GAVAZZI

Carlo Gavazzi Automation is a multinational electronics group active in the design, manufacture 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 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.

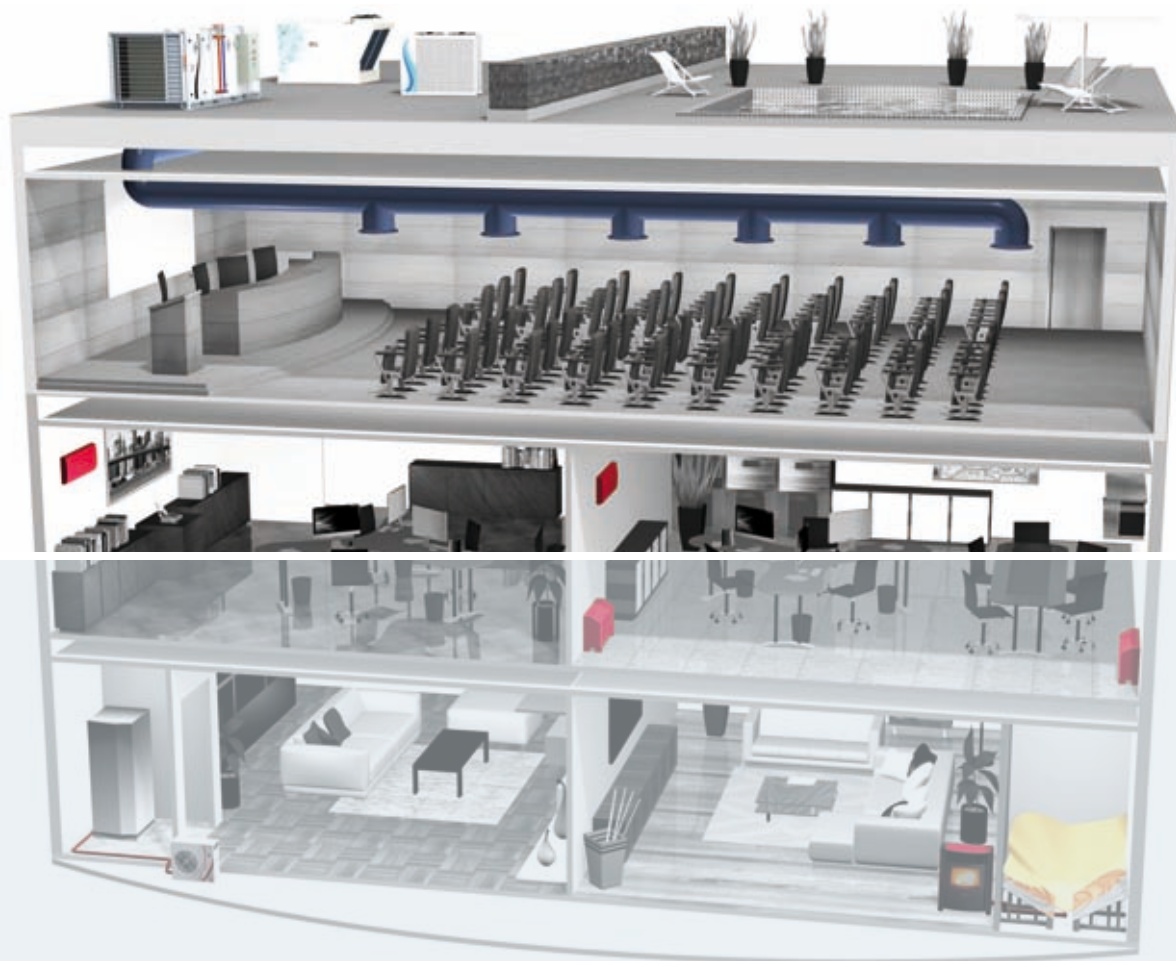
We operate worldwide through 21 our own sales companies and also selected representatives in more than 65 countries, from the United States in the West to the Pacific Rim in the East.

Our core competence in automation spans five product lines : Sense, Switch, Control, Fieldbus and EcoEnergy equipment.

Our wide array of products includes sensors, monitoring relays, timers, solid-state relays, electronic motor controllers, energy management

equipment, fieldbus systems and components for the renewable energy. 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 airconditioning devices.



## DESIGNED TO MARKET REQUIREMENTS

Over 40% of energy in many buildings and facilities is consumed by heating, ventilation and air conditioning systems.

Efficient control and management of these systems, through the use of Carlo Gavazzi products, will result in noticeable energy savings.

CO<sub>2</sub> emissions will be reduced, thus respecting the environment, and the most comfortable living and working conditions will be ensured.

It is possible to **save up to 30%** on energy consumption by using our top quality and competitively-priced

solutions for Heating, Ventilation and Air Conditioning market.

These solutions are innovative and involve state-of-the-art technology.

In many buildings and facilities, most of the motors used in heat and ventilation systems are simply switched on and off with no regulation of the speed of the motors responsible for the output.

As a result the motors run continuously at full speed during the operating period, even when this is not always necessary for the specific requirements of each individual end user.

When environmental conditions need to be controlled according to occupancy, with the help of our solutions, heating and air conditioning

can be activated only when needed.

This is extremely effective in saving energy in areas and periods where human presence is less frequent.

Carlo Gavazzi can provide a comprehensive range of products so as to maximize operating efficiency in both new and retrofit environments.

An added advantage is that this also increases the longevity of the machinery.

# HVAC systems

## Air Handling Units



### Environmental Sensors

CGESCO2  
CGESHT  
CGESAIRVEL

### Variable Speed Drives

RVDF  
RVEF  
RVCF

### Soft Starters

RSHR  
RSDR

### Power Analysers

WM22 - WM30  
WM12 - WM14

### Power Transducers

CPT

### Monitoring Relays

DWA01

### Solid State Relays

RM  
RG

In an air handling unit the air demand is highly variable, depending on the status of the dampers and the quality of the internal air. Using the Variable Frequency Drives RVCF results in great energy saving, ensuring the correct air quantity in all conditions. To monitor the air quality CG-ES sensors

measure CO<sub>2</sub>, air humidity and air temperature or any combination of these. Mounted on the air duct, they convert the measured value into an analogue output for the unit controller or directly for the Drive to control the variables with our internal PID. For the heating part of the unit, to dry

the air or to pre-heat it before entering the system, our Solid State Relays RM and RG provide the necessary fast, reliable and quiet switching capacity. On top of this, RG can also come with heatsink in a 17.5 mm DIN-rail housing for the more space-demanding applications.



# Heat Pumps



## Soft Starters

**RSBS  
RSBS HP  
RSBT**

Heat pumps are an alternative to conventional, fossil-fuel based burners for residential and commercial environments and water heating, cooling, refrigeration and industrial processes.

Heat pumps have the potential of cutting CO2 emissions **by nearly 8%**.

In order to comply with the requirements of the energy suppliers, OEMs must ensure that certain levels of peak currents are not exceeded. Furthermore, in view of the installation of heat-pumps inside residential buildings, space is of a premium and hence heat pump designs, including

## Solid State Relays

**RM  
RG**

## Hybrid Relays

**RMD3H**

the electrical panels, need to be very compact to save floor space. Carlo Gavazzi HVAC softstarters, RSBS (1-phase) and RSBT (3-phase) are specifically designed for scroll compressors which are commonly found in heat pumps and chillers.

These two products are very compact to ensure an easy fit in electrical panels. RSBS and RSBT comply with emissions standards for residential installations. Furthermore, both products are offered in a plug'n'play design which, apart from saving installation time, ensure that no tampering with the softstarter settings can be done in the field.

## Energy Meters

**EM10  
EM23**

## Timers

**DAA51  
DMB51**

## Electromechanical Relays

**RMIA**

Integrated diagnostic functions on RSBS and RSBT ensure that the heat pump's compressor is protected in the event of abnormal conditions.



# HVAC systems

## Chillers



### Monitoring Relays

DPA51 - DPB51  
DLA71 - DPA53

### Variable Speed Drives

RVDF  
RVEF  
RVCF

### Soft Starters

RSHR - RSBT  
RSDR - RSBD  
RSQK - RSXK

### Power Analysers

WM22 -  
WM30/40  
WM12 - WM14

### Energy Meters

EM24

### Power Transducers

CPT

### Timers

DAA51  
DAC51

The compressors used in chillers can fail in the case of incorrect phase sequence (needing replacement of the compressor), so the function has to be monitored. DPA51 is the market leader for the 17.5 mm DIN-rail dimensions with its phase loss detection capability. In case undervoltage is a problem (overheating of the compressor motor), DPA53 adds a setpoint to facilitate keeping only the vital functions on until the grid is back to quality. If installed directly on line, compressors start very abruptly with a huge inrush current; as a result voltage drops and the utility company imposes a fine for exceeding the power limit. To remove these effects

the scroll compressor softstarters RSBD and RSBT, as well as RSHR and RSDR, are used with the additional benefit of a longer lifetime for the chiller. RVDF and RVEF variable speed drives modulate the output water flow to the needs of the plant, thus saving energy. To this purpose our energy

meters provide energy monitoring and cost allocation: from the most basic WM12, to the Modbus transducer CPT - to deliver all the data to the supervision system - from WM40 for Bacnet connection to the building management system.



# Roof Tops



Monitoring Relays	Variable Speed Drives	Soft Starters	Power Analysers	Energy Meters	Solid State Relays	Timers	Environmental Sensors
DPA51 - DPB51 DLA71 - DPA53	RVDF RVEF RVCF	RSHR - RSBT RSDR - RSBD RSQK - RSXK	WM22 - WM30/40 WM12 - WM14	EM24	RM RG	DAA51 DAC51	CGESCO2 CGESHT CGESAIRVEL

This kind of plant needs to deliver high quality air (for temperature, flow, humidity and CO2) at every single moment, requiring very high performance of sensing and control components.

CG-ES air quality sensors provide the control unit with the environmental values: RSBT, RSBD, RSHR and RSDR softstarters ensure proper and reliable starts without side effects on the surroundings; RVCF ensures the correct air flow for the building.

RM and RG are used to heat and dry the air when needed, DPA51, DPA53 and DPB51 monitor the quality of the mains, while timers are used in a variety of cases, for instance DAC51 when star-delta start is installed.



# HVAC systems

## Pellet Burners



### Variable Speed Drives

**RVDF  
RVEF  
RVCF**

### Capacitive Sensors

**CA18  
EC30  
CD50**

### Solid State Relays

**RP10  
RM1A**

Pellet burners for domestic heating use a remote reservoir of a few cubic meters and a feeding system to transfer some of the pellets from the main reservoir to a smaller one in the burner.

To activate this system in the case of low levels or to stop the transfer of the

pellets because the burner reservoir is full, our CA18, EC30 or CD50 capacitive sensors are used.

Their main features are excellent EMC immunity and the best detection performance in the market, to allow correct detection in all conditions, including the cases where powder

remains on the reservoir surface.

Solid state relays RP10 and RM1A are used to start the water pumps or the fans for the smoke.

High frequency and silent operation make the difference in this application.





# Our expertise in scroll compressors



## Soft Starters

### RSBS RSBS HP

#### ENERGY EFFICIENCY in HVAC

Scroll compressors have earned a strong reputation in HVAC Applications by proving to be a more reliable, compact and efficient solution than other categories of compressors. Worldwide initiatives promoting energy efficiency in the building sector are generating growing interest in more cost saving and efficient HVAC solutions, making the use of scroll compressors more and more a necessity.

Additionally, some countries have strict regulations on the maximum inrush current that is allowed during starting. In order to comply with such regulations, alternative means of starting the scroll compressor need to be installed.

Scroll compressors started via a direct on line (DOL) method normally require about 6 to 8 times the rated compressor current. This rapid inrush of current may cause undesirable effects on the system and equipment such as:

- Voltage fluctuations creating disturbances to neighbouring equipment.
- Light flickering.
- Triggering of protection equipment due to high peaks in starting current.
- Increased compressor noise and vibration during start.
- Excessive stresses on compressor, reducing compressor lifetime.

## Soft Starters

### RSBD RSBT

#### OUR SOFT STARTERS RANGE

Carlo Gavazzi's HVAC compressor soft starters provide a means of reducing high values of inrush currents and the associated effects.

RSBS, RSBD and RSBT single and three phase softstarters are specifically designed for scroll compressor applications.

The innovative auto-adaptive algorithm patented on RSBT and RSBD ensures a typical inrush current reduction of >50% when compared to a DOL start. RSBS, on the other hand, has a fixed current limit to comply with regulations of certain utility companies such as in France.

# HVAC systems

## Our product range

Phase sequence and loss relays	Monitoring relays	Cosφ relays	Pump alternating relays
<p><b>DPA51 / DPA53</b></p> <ul style="list-style-type: none"> <li>• Dimensions 81x17.5x67.2 mm DINrail housing</li> <li>• Phase sequence and loss relay</li> <li>• 3 phase AC (own power supply); regenerated voltage</li> <li>• Power supply 208 to 480 VAC (±15%)</li> <li>• Undervoltage detection</li> <li>• UL, CSA and CCC approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Compressor protection from reverse running and phase loss</li> <li>• 17.5 mm width: the smallest in the market</li> <li>• Plug&amp;Play: no settings needed</li> </ul>	<p><b>DPB51</b></p> <ul style="list-style-type: none"> <li>• Dimensions 81 x 17.5 x 67.2 mm DIN-rail housing</li> <li>• TRMS 3-phase over/under voltage, phase sequence and loss relay</li> <li>• 3 phase AC (own power supply); regenerated voltage</li> <li>• Power supply 208 to 480 VAC</li> <li>• UL and CSA approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Detects the phase-phase or phaseneutral voltage</li> <li>• 17.5 mm width: the smallest in the market</li> <li>• Independent voltage setpoints and built-in delays</li> </ul>	<p><b>DWA01</b></p> <ul style="list-style-type: none"> <li>• Dimensions 83 x 22.5 x 99.5 mm DIN-rail housing</li> <li>• Cosφ monitoring relays</li> <li>• 3 phase AC (own power supply); regenerated voltage</li> <li>• Power supply 208 to 240 VAC or from 380 to 480 VAC</li> <li>• UL and CSA approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Detects any potentially dangerous change of the cosφ</li> <li>• Direct current connection or by CT</li> <li>• Easy setup</li> </ul>	<p><b>DLA71</b></p> <ul style="list-style-type: none"> <li>• Dimensions 81x35.5x67.2 mm DINrail housing</li> <li>• Pump alternating relay for 2 or 3 pumps</li> <li>• Galvanically separated power supply, 24/48 or 115/230 VAC</li> <li>• 2x or 3x 5A SPST output</li> <li>• UL and CSA approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Built-in function for automaticrotation of the pumps</li> <li>• Built-in delay for the second or thirdpump in case simultaneous activation is required</li> <li>• Built-in function for automaticrotation of the pumps</li> </ul>



Timers	3-phase scroll compressor soft starters	3-phase scroll compressor soft starters	1-phase scroll compressor soft starters
<p><b>DAA51 / DAC51</b></p> <ul style="list-style-type: none"> <li>• Dimensions 81 x 17.5 x 67.2 mm DIN-rail housing</li> <li>• Delay on operating function (DAA), start/delta function (DAC)</li> <li>• Universal power supply</li> <li>• Repeatability: &lt; 0.2%</li> <li>• UL and CSA approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Extended delay-on-operating time, selectable from 0.1 s to 100 h</li> <li>• Star-delta control function with star and star-to-delta adjustable times</li> <li>• Protection against frequent compressor starting and from big inrush currents</li> </ul>	<p><b>RSBT</b></p> <ul style="list-style-type: none"> <li>• Enhanced current reduction capability with patented auto-adaptive algorithm</li> <li>• Integrated advanced diagnostic functions</li> <li>• 3-phase controlled and internally bypassed</li> <li>• Compliant with Residential (Class B) Limits for Emissions</li> <li>• cULus listed</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Plug&amp;Play: no external settings needed</li> <li>• Typically &gt;50% scroll compressor inrush current reduction</li> <li>• Compact dimensions: better panel space savings</li> </ul>	<p><b>RSBD / RSBT</b></p> <ul style="list-style-type: none"> <li>• Enhanced current reduction capability with patented auto-adaptive algorithm</li> <li>• Integrated advanced diagnostic functions</li> <li>• 2-phase (RSBD) and 3-phase (RSBT) controlled and internally bypassed solutions</li> <li>• Top of ramp and alarm relay indication</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• No external settings required</li> <li>• Multi-voltage operation: 220-480 VAC 50/60 Hz</li> <li>• Operational current: 55/70/95 AAC</li> <li>• Internally supplied</li> </ul>	<p><b>RSBS / RSBS HP</b></p> <ul style="list-style-type: none"> <li>• Current limit starting</li> <li>• Advanced diagnostic functions</li> <li>• Internally bypassed</li> <li>• Up to 12 starts per hour</li> <li>• cULus listed, EN60335-2-40 approval</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Plug&amp;Play: no external settings needed</li> <li>• Space saving IP20 design</li> <li>• Integrated starting capacitor</li> <li>• Optimised algorithm for high pressure starts (RSBS HP)</li> </ul>



# Our product range

3 phase 7.5kW soft starters	3-phase 7.5kW soft starters	3-phase 280kW soft starters	3 phase 1000kW soft starters
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### RSHR Midi

- Operational Voltage: Up to 600 VAC 50/60 Hz
- Motor Rating: 3-phase up to 7.5 kW @ 400 V
- Ramp up time: 0.5 - 10 sec
- Ramp down time: 0.5 - 20 sec
- UL, cUL listed

### MAIN FEATURES

- Up to 250 starts per hour
- Compact 45 mm housing
- Auxiliary relay for end of ramp (optional)

### RSHR

- Operational Voltage: Up to 600 VAC 50/60 Hz
- Motor Rating: 3-phase up to 22 kW @ 400 V
- Ramp up time: 1 - 10 sec
- Ramp down time: 1 - 30 sec
- UL, cUL, CSA approvals

### MAIN FEATURES

- Up to 50 starts per hour
- Wide operating temperature: -20C to +60°C
- Internally bypassed: less heat dissipation

### RSDR

- Motor Rating: Up to 280 kW @400 V
- Ramp up time: 0.5 - 30 sec
- Internally bypassed
- 6-wire connection capability
- UL approved (pending)

### MAIN FEATURES

- Multi voltage operation: 230 - 460 VAC, 50/60 Hz
- Auxiliary relays for top of ramp and alarms

### RSQK

- 3 phase controlled.
- Automatic application setup
- UL approved
- Inside delta capability
- Static load control (Resistive and Inductive)

### MAIN FEATURES

- Integrated keypad with LCD display
- Alpha numeric display of parameters and alarms
- Energy optimising capability



3 phase 1050kW soft starters	Variable speed drives	Variable speed drives	Variable speed drives
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### RSXK

- 3 phase controlled.
- Automatic application setup
- Inside delta capability
- Trip Class 30 starting duty

### MAIN FEATURES

- Integrated keypad with LCD display.
- Alpha numeric display of parameters and alarms
- Energy optimising capability

### RVDF Series

- Variable speed drive for 3-phase AC motors
- V/F control mode
- Simple installation
- 1-phase and 3-phase power supply up to 2.2 kW

### MAIN FEATURES

- Energy saving in fan speed management
- IP65 version suitable for outdoor mounting (next to the fans)
- Very compact for panel space reduction

### RVEF Series

- Variable speed drive for 3-phase AC motors
- Sensorless and V/F control modes
- Free programming and monitoring software
- 1-phase and 3-phase power supply up to 2.2 kW

### MAIN FEATURES

- Embedded PID controller for optimal control of air quality
- Full protection functions in case of failure of the system
- MODBUS communication for remote control and management

### RVCF Series

- Variable speed drive for 3-phase AC motors
- Sensorless and V/F control modes
- PLC functions included
- 1-phase and 3-phase power supply up to 5.5 kW

### MAIN FEATURES

- Pump flow control for energy saving
- Embedded PID controller for optimal control
- Pumps protected from major damage (dry running)



# HVAC systems

## Our product range

1-phase solid state relays	1-phase solid state relays	1-phase hybrid relays	1-phase solid state contactors
<b>RM, RAM Series</b> <ul style="list-style-type: none"> <li>• Dimensions 58.2 x 44.8 x 28.8 mm, panel mount</li> <li>• Operational voltage range: 24 - 660 VAC</li> <li>• Rated Operational current: 25, 50, 75, 100, 125 AAC</li> <li>• Control input ranges: 4 - 32 VDC, 20 - 280 VAC</li> <li>• CE - cURus - CSA - VDE (optional)</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Zero switching or Random Switching</li> <li>• Low noise emission - EN55011 class B conformance [RM1A..L]</li> <li>• Integrated over-voltage protection [RM1A]</li> </ul>	<b>RGS Series</b> <ul style="list-style-type: none"> <li>• Dimensions 90 x 17.5 x 50.6 mm, panel mount</li> <li>• Operational voltage range: 24 - 660 VAC</li> <li>• Rated Operational current: 25, 50, 75, 90 AAC</li> <li>• Control input ranges: 4 - 32 VDC, 20 - 275 VAC (24 - 190 VDC)</li> <li>• CE - cURus - CSA - VDE (pending)</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Zero switching or Random Switching</li> <li>• Slim 17.5 mm product width</li> <li>• Integrated over-voltage protection</li> </ul>	<b>RMD1H Series</b> <ul style="list-style-type: none"> <li>• Dimensions 81 x 17.5 x 67.2 mm, DIN-rail mount</li> <li>• Operational voltage range: 90 - 260 VAC</li> <li>• Rated Operational current: 20 AAC</li> <li>• Control input ranges: 4 - 32 VDC, 24 - 275 VAC (24 - 190 VDC)</li> <li>• CE - cURus</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Integrated bypass relay and overtemperature protection</li> <li>• 5 million cycles operating lifetime</li> <li>• Low noise emission - EN55011 class B conformity</li> </ul>	<b>RJ1P Series</b> <ul style="list-style-type: none"> <li>• Dimensions 81.7 x 45 x 107 mm, DIN-rail mount</li> <li>• Operational voltage range: 90 - 660 VAC</li> <li>• Rated Operational current: 30, 50 AAC</li> <li>• Control input ranges: 4 - 20 mAdc, 0 - 10 VDC</li> <li>• CE - cURus</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Phase angle control or full cycle firing</li> <li>• 0 to 99% power output control</li> <li>• Integrated over-voltage protection</li> </ul>



Full Cycle Power Regulator	1-phase solid state contactors	Multifunction meters	Power analysers
<b>RN2F</b> <ul style="list-style-type: none"> <li>• Dimensions 120x90x103 mm, DIN-rail housing</li> <li>• Distributed full cycle switching</li> <li>• 2-pole switching for three phase heater control</li> <li>• 4 - 20 mA or 0 - 10 VDC analogue control</li> <li>• cULus, CSA approved</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Decreases thermo-mechanical stresses on heating element</li> <li>• Alarm indication for loss of master phase</li> <li>• 2-phase control</li> </ul>	<b>RGC1A Series</b> <ul style="list-style-type: none"> <li>• Dimensions 90x17.5x140.6 mm, DIN-rail mount</li> <li>• Operational voltage range: 24-660 VAC</li> <li>• Rated Operational current: 20, 30, 40, 60 AAC</li> <li>• Control input ranges: 4-32 VDC, 20-275 VAC (24-190 VDC)</li> <li>• CE - cULus - CSA - VDE (pending)</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Zero switching or Random Switching</li> <li>• Slim product width</li> <li>• Integrated over-voltage protection</li> </ul>	<b>WM12 / WM14</b> <ul style="list-style-type: none"> <li>• Dimensions 6-DIN rail module or 96 x 96 mm panel mounting housings</li> <li>• 3-phase multifunction indicator (WM12) or analyser (WM14)</li> <li>• Accuracy 0.5 % (voltage, current)</li> <li>• Front protection degree IP65, NEMA4X, NEMA12</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Available models from a simple indicator to an advanced analyser</li> <li>• Serial re-transmission of the main parameters to a PLC for full control of the system</li> <li>• Suitable for DIN-rail or panel mounting</li> </ul>	<b>WM22</b> <ul style="list-style-type: none"> <li>• Dimensions 9-DIN rail module housings</li> <li>• Accuracy 0.5 % (voltage, current)</li> <li>• Direct current connection (100 A) or CT</li> <li>• Front protection degree IP40</li> <li>• THD measurement included</li> </ul> <b>MAIN FEATURES</b> <ul style="list-style-type: none"> <li>• Direct measurement up to 100 A at same cost as the CTs</li> <li>• Provides electrical variables set to a PLC to manage compressors and other loads</li> <li>• Allows local energy consumption for cost allocation purposes</li> </ul>



# Our product range

Smart modular power analysers	Energy meters	Power transducers	Cup anemometers
<p><b>WM30</b></p> <ul style="list-style-type: none"> <li>• Dimensions 96 x 96 mm panel mounting housing.</li> <li>• Accuracy 0.2 % (voltage, current)</li> <li>• Universal power supply</li> <li>• Front protection degree IP65, NEMA4X, NEMA12</li> <li>• cULus approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Provides installation data to a SCADA to manage the whole system</li> <li>• Modular housing to build the instrument according to the real application needs</li> <li>• Modbus, Ethernet and BACnet-IP communication ports available</li> </ul>	<p><b>EM10, EM23, EM24</b></p> <ul style="list-style-type: none"> <li>• Single-phase and 3-phase energy meters with direct connection</li> <li>• Current rates up to 32 A (EM10) or 65 A (EM23 and EM24)</li> <li>• 1 or 4 DIN-rail housing dimensions (EM10, EM23 and EM24)</li> <li>• Class 1 (kWh) acc. to EN62053-1</li> <li>• Pulse open collector output</li> <li>• Modbus connection port (EM24)</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Direct measurement in a very compact housing to save space</li> <li>• Enables and simplifies energy cost allocation</li> <li>• MID Annex D certification available</li> </ul>	<p><b>CPT</b></p> <ul style="list-style-type: none"> <li>• Dimensions 83.5x45x98.5 mm DINrail housing</li> <li>• Accuracy 0.5 % (voltage, current)</li> <li>• Measurement by CT and VT</li> <li>• Front protection degree IP20</li> <li>• Analogue, digital, pulse or serial outputs available</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Very compact size power transducer</li> <li>• Provides electrical variables set to a PLC to manage compressors and other loads</li> <li>• Suitable for on-board panel installation</li> </ul>	<p><b>DWS-V</b></p> <ul style="list-style-type: none"> <li>• Rotor in Stainless steel, black</li> <li>• Wind speed detecting from 1.5 to 30m/s</li> <li>• Output NPN and PNP</li> <li>• Pulsed output: 10 Imp/ sec per m/s</li> <li>• CE approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Detection of air flow in big airconditioning systems</li> </ul>



Environmental sensors CO <sub>2</sub>	Environmental sensors humidity and temp.	Environmental sensors air velocity	Capacitive sensors
<p><b>CGESCO2</b></p> <ul style="list-style-type: none"> <li>• CO2 sensor</li> <li>• Duct and wall mounting</li> <li>• Working range 0-2000ppm/0-5000ppm</li> <li>• 3 outputs: 0-10 V; 4-20 mA; switching output</li> <li>• Supply voltage: 24 V AC/DC</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• High accuracy ±50 ppm (+2%) at 2000 ppm</li> <li>• Auto-calibration</li> <li>• Plug&amp;Play: no settings needed</li> </ul>	<p><b>CGESHT</b></p> <ul style="list-style-type: none"> <li>• Relative Humidity and Temperature sensor</li> <li>• Duct and wall mounting</li> <li>• Working range 0...95% RH; 0...50°C</li> <li>• 2 outputs: 0-10 V; 4-20 mA; Supply voltage: 24 V AC/DC</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Different probe length</li> <li>• Display</li> <li>• Plug&amp;Play: no settings needed</li> </ul>	<p><b>CGESAIRVEL</b></p> <ul style="list-style-type: none"> <li>• Air Velocity sensor</li> <li>• Duct mounting</li> <li>• Working range 0...10/15/20 m/s</li> <li>• Outputs: 0-10 V; 4-20 mA;</li> <li>• Supply voltage: 24V AC/DC</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Low angular dependence</li> <li>• Very good accuracy at low air velocity</li> <li>• Plug&amp;Play: no settings needed</li> </ul>	<p><b>EC30</b></p> <ul style="list-style-type: none"> <li>• High EMC Immunity.</li> <li>• M30 mm housing, easy to mount</li> <li>• Power supply 10-40 VDC, 200 mA NPN or PNP, NO and NC</li> <li>• Power supply 20-250 VAC, 500 mA SCR, NO or NC</li> <li>• CE, UL and CSA approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>• Reliable detection of pellets in the burner's feeding system</li> </ul>



# HVAC systems

## Our product range

Capacitive sensors	Photoelectric level sensors	Conductive level systems	Conductive level probes
<p><b>CD50</b></p> <ul style="list-style-type: none"> <li>Flat pack sensor, easy to mount</li> <li>Dimensions: 50 x 30 x 7 mm</li> <li>Power supply 10-30 VDC, 50 mA NPN or PNP, NO or NC</li> <li>CE approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>Detection of condensed water from Airconditioning system</li> </ul>	<p><b>VP, VPA or VPB</b></p> <ul style="list-style-type: none"> <li>3/8 "pipe thread x 70,5 (74 mm) housing</li> <li>Power supply 10-40 VDC, 200 mA NPN or PNP, NO and NC</li> <li>CE approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>Detection of condensed water from Airconditioning system</li> <li>Reliable detecting of water even with oil presence</li> </ul>	<p><b>CLD / CLP</b></p> <ul style="list-style-type: none"> <li>Exact level detecting with insulated electrodes</li> <li>SPDT 8 A relay output</li> <li>Power supply 24 VAC/DC, 115 VAC or 230 VAC</li> <li>CE, UL and CSA approved</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>Detection of condensed water from Airconditioning system</li> <li>Easy to install with simple electrodes</li> </ul>	<p><b>CLH</b></p> <ul style="list-style-type: none"> <li>1 - 5 stainless steel electrodes</li> <li>Ø 4 user defined electrode length</li> <li>Insulation available in Kynar or Polyolefine</li> <li>1 1/2" pipe thread mounting</li> <li>IP65/68 rating</li> </ul> <p><b>MAIN FEATURES</b></p> <ul style="list-style-type: none"> <li>-20°C to 90°C</li> <li>replaceable electrodes</li> </ul>



## Electromechanical relays

### RMIA Series

- 2, 3 and 4 poles
- 5 A and 10 A
- 6 to 380 VAC coil voltage
- 6 to 240 VDC coil voltage

### MAIN FEATURES

- High inrush monostable
- Small size
- Standard with LED, push arm and flag



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Zejtun - **MALTA**

Carlo Gavazzi Controls SpA  
Belluno - **ITALY**

Uab Carlo Gavazzi Industri Kaunas  
Kaunas - **LITHUANIA**

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