Solutions

HVAC systems
Solutions for HVAC systems

ABOUT CARLO GAVAZZI

Carlo Gavazzi Automation is an international 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 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.

Air handling units  Heat pumps  Chillers  Roof tops  Pellet burners
DESIGNED TO MEET MARKET REQUIREMENTS

It is becoming more and more important to have an energy-efficient integrated HVAC system for buildings. That is why HVAC components, such as heat pumps, rooftops, chillers and air handling units need more effective control and energy saving features to improve overall performance.

HVAC trends also show the increasing use of permanent magnet motors to increase system efficiency, greatly reducing the footprint while increasing performance.

Communication is crucial between the building management system and the components downstream. The use of protocols such as BACnet or MODBUS is becoming more and more common, involving components such as the main controllers, the compressor, the expansion valve, the energy meter and the softstarter.

Enhance performance with our monitoring relay solutions
- Various monitoring functions: phase sequence, phase loss and voltage level
- Compact dimensions

Increase system efficiency with our solutions for energy management
- Energy meters & power transducers
- Power analysers
- Current transformers
- Serial communications
- Solutions with BACnet communication
- Web-server solutions

Extend the lifetime of scroll compressors with easy to use soft starting solutions
- Dedicated solutions for scroll compressors
- 1- and 3-phase compact solutions
- 2- and 3-phase controlled solutions
- Integrated monitoring functions
- Modbus communication

Resistive heaters switching with solid state relays
- ON/OFF solid-state contactors
- Proportional controllers
- Wide range of 1-phase and 3-phase solutions
- Modular solutions
HVAC systems

Air handling units

Carlo Gavazzi’s comprehensive range of energy meters, energy analysers and power transducers keep your plant monitored 24/7. The following communication protocols are available: Modbus, BACnet, M-bus and Profibus. Our web server solutions also provide multi-site monitoring.

Our easy to use and reliable soft starter range, with extended ramp-up times, ensures smoother centrifugal fan starts. An intelligent algorithm for current reduction and current balancing results in fewer electrical disturbances and less vibrations during starts. A wide selection of solid-state relays offers analogue switching versions for the efficient control of resistor packs for heating or dehumidification and Zero Cross switching to reduce electrical spikes on the network.

Our compact monitoring relays for power factor monitoring allow the detection of broken belts in centrifugal fans.

- Efficiency improvement
- Easy access to monitored data via IT network
- Reduced maintenance and lower mechanical noise when fan starts
- Fewer electrical disturbances and lower current peaks
- Reduced air pressure shocks in the case of canvas ducts
- Optimal de-humidification

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<td></td>
<td></td>
<td></td>
<td>RM1E</td>
<td></td>
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<td>RK</td>
</tr>
</tbody>
</table>
Carlo Gavazzi’s comprehensive range of solid state relays for auxiliary heater switching also includes low noise versions so as to reduce disturbance to the supply network. Slim energy meters are available for 1-phase applications. Our wide range of monitoring relays provides phase loss, phase sequence, over and undervoltage monitoring. The complete range for fixed speed scroll compressors consists of 1- and 3-phase dedicated to soft starters and 2- and 3-phase controlled solutions with a patented self-learning algorithm to limit scroll compressor start current. The RSBS and RSBT soft starters are compliant with EMC Class B (residential).

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<tr>
<th>Soft starters</th>
<th>Solid state relays</th>
<th>Monitoring relays</th>
<th>Energy meters/analysers</th>
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<tr>
<td>RSBS</td>
<td>RM</td>
<td>DPA51</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RSBD/RSBT</td>
<td>RGC3P</td>
<td></td>
<td>EM340</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Noise-free switching of auxiliary heaters
- Plug’n’play soft starting solutions
- Best-in class current reduction
- Compliant with the stringent requirements for noise emissions
- Easy to fit in electrical panels
- More protection for the compressor
- Quick detection of abnormal conditions
- Compatibility with permanent magnet motors
**HVAC systems**

**Chillers**

Carlo Gavazzi’s compact and cost-effective range of power supplies, timers and monitoring relays are designed to meet your toughest specification requirements for panel mounting.

2-phase controlled solutions with current balancing, 3-phase scroll compressor soft starters up to 95 A with a dedicated algorithm for multi-scroll compressor applications. Our solutions for energy management for DIN and panel mount are comprehensive and versatile for the monitoring and power analysis. Modbus or BACnet communication ports are available for communication with controllers and BMS.

- Easy installation even in limited space
- Protection of compressors
- Reduction of starting current by 50%
- No settings required
- Improved efficiency
- Remote access to data
- Easy integration into existing communication networks

The WM15 is a power analyzer with MID certification extended to an Aaron connection: this allows a legal measurement of the HVAC plant consumption and, in case of proven savings, access to the green/white certificates or incentives.

In order to duly monitor the water level in the tank, a CD34 sensor can be strapped to the pipe, informing the control system about the status of the water level at this point.

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<tr>
<th>Monitoring relays</th>
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<th>Capacitive level sensor</th>
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</tr>
<tr>
<td>DPA51/DPA52</td>
<td>SPM/SPPC</td>
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<td>WM40</td>
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</tr>
<tr>
<td>DPA53/DLA71</td>
<td>RSBD/RSWT</td>
<td></td>
<td>WM30</td>
<td>EM330/EM340</td>
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</tr>
</tbody>
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The WM15 is a power analyzer with MID certification extended to an Aaron connection: this allows a legal measurement of the HVAC plant consumption and, in case of proven savings, access to the green/white certificates or incentives.

In order to duly monitor the water level in the tank, a CD34 sensor can be strapped to the pipe, informing the control system about the status of the water level at this point.
Roof tops

Carlo Gavazzi’s range of energy meters and power analyzers fulfil all requirements in terms of both features and costs, for remote monitoring of energy consumption. The comprehensive communication protocols and web-server solutions allow flexible and easy integration.

We offer proportional controllers for heaters and fans. Our compact IP20 solutions with phase angle control for fan speed regulation (1-phase and 3-phase), also 2-phase solutions for resistive heater modulation (RGC2P) full cycle switching. Our range of soft starters are able to provide integrated diagnostic functions for additional protection.

The related operational temperature range is up to 60°C. The self-learning algorithm, which is active at every compressor start, ensures that the compressor always starts with the correct parameters. Modbus communication is also available to transmit real-time data to the machine controller.

- Efficiency improvement
- Easy data transmission to the BMS or the controller
- Automatic settings
- Reliable operation even at high temperatures
- Compact and cost-effective solutions

<table>
<thead>
<tr>
<th>Monitoring relays</th>
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<th>Soft starters</th>
<th>Power quality analyzers</th>
<th>Energy meters/analyzers</th>
<th>Solid state relays</th>
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<tbody>
<tr>
<td>DPA51/DPA52</td>
<td>SPM</td>
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<td>WM40</td>
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<tr>
<td>DPB01/DPB52</td>
<td>SPDC/SPDM</td>
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<td>RGC3A</td>
<td>RGC3P</td>
</tr>
<tr>
<td></td>
<td>SPPC</td>
<td>RSBD</td>
<td>WM20</td>
<td>RGC1P</td>
<td></td>
</tr>
</tbody>
</table>

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.
Carlo Gavazzi’s compact and cost-effective series of solid state relays is widely known for its reliability and robustness for high switching frequencies of water pump or smoke fan.

Our ICB inductive sensors are used to detect the position of the dampers so as to direct the air flow where needed.

Short circuit, reverse polarity and transients protection is assured.

Our new 4th generation of Tripleshield sensors CA30CA... allows a dust alarm to be sent when the sensor gets dirty and needs to be cleaned.

A temperature alarm is sent when the temperature exceeds 60°C.

EMC immunity and high sensing capability ensure correct detection in all conditions, especially where pellet-dust remains on the reservoir surface.

The new CA30CAN25... IO-Link sensor has a 16 bit “analogue” value present in the cyclic process data file, giving information about the density of the wooden pellets around the sensor, allowing the customer to change the speed of the worm drive to feed the correct amount of pellets to the burner.

The alarm temperature in this sensor can be set up at the appropriate value by the customer.

- High switching frequency
- Silent and reliable operation even in harsh environments
- Safer operation of the burner
- Intelligent alarms
- Different configurations available, tailored to specific needs
Our expertise in scroll compressors

In a heat pump, as well as in a rooftop or in a chiller unit, the compressor is the heart of the system. It supplies the inverse cycle and is also the most expensive and energy-consuming device in the machine. When starting, the scroll compressor operates in a very abrupt way and this can lead to undesirable effects to the machine itself and to the nearby environment. A direct on-line (DOL) start is performed in just 3 cycles (around 60 ms) for a 3-phase machine and a little more for 1-phase ones. This can result in rapid inrush current (around 8 times the nominal current) and significant vibrations. The first effect of high inrush current is voltage fluctuations during starts, especially where the grid is not so resistant, as in many domestic or commercial environments or in locations far from the energy source. This leads to lights flickering and potential interference with equipment such as LAN networks, Wifi, smartphones and tablets. The second effect is that the nominal current for the utility contract may be exceeded, which could result in fines from the energy supplier or having to increase the contract power at a higher cost. In addition, direct on-line starts cause wear and tear to the coils, reducing the lifetime of the compressor. Vibrations mainly cause a shock to the motor, starting from the shaft, which means shorter compressor lifetime. They also lead to mechanical shock to the pipes which, especially in the long term and for larger machines, can cause refrigerant leakage. Last but not least, the noise of a direct on-line start can be rather annoying. These problems can be solved by using our range of soft starters specifically designed for scroll compressor applications. Inrush current is reduced by 50 to 55% and the compressor is started within 1s, allowing a smooth start and proper compression and lubrication. The 3-phase RSBD and RSBT soft starters are provided with an auto-adaptive algorithm which ensures the best inrush current reduction at every start. As the soft starter follows the changes in the compressor and the system over time, no setting is needed. At the same time, when unexpected conditions occur, such as a very high pressure difference in the refrigeration circuit, the soft starter will react ensuring starting even in the worst conditions.
HVAC systems

Our product range

<table>
<thead>
<tr>
<th>3-phase scroll compressor soft starters</th>
<th>3-phase pump and ventilator soft starters</th>
<th>1-phase scroll compressor dynamic starter</th>
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</table>

**RSBT**
- Enhanced current reduction capability with patented auto-adaptive algorithm
- Integrated advanced diagnostic functions
- 3-phase controlled and internally bypassed
- Compliant with Residential (Class B) Limits for Emissions
- cULus listed, VDE (EN60335-2-40), CCC approved

**MAIN FEATURES**
- Plug and play: no external settings needed
- Typically >50% scroll compressor inrush current reduction
- Compact dimensions: better panel space savings

**RSBT 120 mm**
- Patented algorithm achieves 50% current reduction vs direct on-line start
- Operational current: 55/70/95 AAC
- Operational voltage: 220 - 480 VAC, 50/60 Hz
- Alarm, Top of ramp relay output
- cULus, CCC, EAC approved

**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
- cULus approved

**MAIN FEATURES**
- No need for a start capacitor
- Self-learning algorithm
- Plug and play: no user settings required
- Modbus RTU and NFC interface

**RSWT 45/75/120 mm**
- Motor rating: up to 45 kW (90 AAC)
- 3-phase controlled & internally bypassed
- Ramp-up/Ramp-down time: up to 20 sec
- “Operational voltage: RSWT45: 220 - 400 VAC, RSWT60: 220 - 600VAC”
- PTC input, Alarm - Top of Ramp - Run relay indication

**MAIN FEATURES**
- Multi-voltage operation: 220 - 480 VAC
- Plug and play: no user settings required
- 3-phase controlled with internal bypass
- Modbus RTU over RS485 serial communication

**RSBS**
- Current limit starting
- Advanced diagnostic functions
- Internally bypassed
- Up to 10 starts per hour
- External start capacitor option
- cULus, EAC approved

**MAIN FEATURES**
- Plug and play: no external settings needed
- Space saving IP20 design
- Integrated starting capacitor
- Optimized algorithm for high pressure starts

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

### Compact motor soft starters

**RSGD 45 / 75 mm**
- Operational voltage range: 187-440 VAC, 187-660 VAC
- Operational current range: 12 AAC up to 100 AAC
- Control voltage: 24 VAC/DC or 110-400 VAC
- Auxiliary relays for top of ramp and alarms
- cULus, CCC, EAC approved

**RSGD 45 / 75 mm**
- Operational voltage range: 187-440 VAC, 187-660 VAC
- Operational current range: 12 AAC up to 100 AAC
- Control voltage: 24 VAC/DC or 110-400 VAC
- Auxiliary relays for top of ramp and alarms
- cULus, CCC, EAC approved

**MAIN FEATURES**
- Compact dimensions: up to 22 kW in 45 mm wide housing (RSGD 45 mm), up to 55 kW in 75 mm wide housing (RSGD 75 mm)
- Easy to setup: self-learning algorithm
- Internally bypassed and supplied

### Variable frequency drives

**RVFF**
- 6 compact frame sizes. Panel mount
- 3-phase supply. Output ratings up to 160 kW
- Multi motor control: VF, SLV, PMSLV
- Integrated filters up to 55 kW
- cULus, CE approved

**RVLF**
- 4 mini frame sizes for ratings up to 11 kW
- Input voltage options for 110 V, 230 V and 400 V
- Efficient control via VF or SLV algorithms
- Integrated Class A filters for most models
- cULus, CE approved

**MAIN FEATURES**
- Sensor-less vector control for precise speed control
- PTC inputs allow monitoring of motor temperature
- On board PID and PLC functions for efficient control of HVAC system

### Variable frequency drives

**RP1**
- Dimensions: 37 x 43 x 22 mm, PCB mounted
- Rated operational voltage: up to 480 VAC
- Rated operational current: up to 10 AAC
- Control input range: 4-32 VDC
- CE, cULus, EAC approved

**RP1**
- Dimensions: 37 x 43 x 22 mm, PCB mounted
- Rated operational voltage: up to 480 VAC
- Rated operational current: up to 10 AAC
- Control input range: 4-32 VDC
- CE, cULus, EAC approved

**MAIN FEATURES**
- Zero cross or instant-on switching
- Optional DIN mounting with RP..Ax accessory

### PCB mounted solid state relays

**RG51A / RGC1A**
- Product width 17.5 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Integrated output overvoltage protection
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus (RGC), UR (RGS), CSA (RGS), VDE, EAC, GL (up to 30 AAC) approved

**RG51P / RGC1P**
- Product width 35 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Control input: 4-20 mA, 0-10 VDC, 0-5 VDC, 1-5 VDC, external potentiometer
- LED indication for control and load status
- CE, cULus (RGC), UR (RGS), CSA (RGS), EAC approved

**MAIN FEATURES**
- Integrated heatsink (RGC1A) or without heatsink (RG51A)
- 100 kA short circuit current rating
- Optional overtemperature protection (RGCTA)

### 1-phase solid state relays

**RGS1A / RGC1A**
- Product width 17.5 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Integrated output overvoltage protection
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus (RGC), UR (RGS), CSA (RGS), VDE, EAC, GL (up to 30 AAC) approved

**RGS1P / RGC1P**
- Product width 35 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Control input: 4-20 mA, 0-10 VDC, 0-5 VDC, 1-5 VDC, external potentiometer
- LED indication for control and load status
- CE, cULus (RGC), UR (RGS), CSA (RGS), EAC approved

**MAIN FEATURES**
- Power control via a selectable switching mode (phase angle, full cycle, advance full cycle or soft start switching)
- Compact dimensions
- Reliability with integrated overvoltage protection

### 1-phase proportional controllers

**RP1**
- Dimensions: 37 x 43 x 22 mm, PCB mounted
- Rated operational voltage: up to 480 VAC
- Rated operational current: up to 10 AAC
- Control input range: 4-32 VDC
- CE, cULus, EAC approved

**RP1**
- Dimensions: 37 x 43 x 22 mm, PCB mounted
- Rated operational voltage: up to 480 VAC
- Rated operational current: up to 10 AAC
- Control input range: 4-32 VDC
- CE, cULus, EAC approved

**MAIN FEATURES**
- Zero cross or instant-on switching
- Optional DIN mounting with RP..Ax accessory

**RG51A / RGC1A**
- Product width 17.5 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Integrated output overvoltage protection
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus (RGC), UR (RGS), CSA (RGS), VDE, EAC, GL (up to 30 AAC) approved

**RG51P / RGC1P**
- Product width 35 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Control input: 4-20 mA, 0-10 VDC, 0-5 VDC, 1-5 VDC, external potentiometer
- LED indication for control and load status
- CE, cULus (RGC), UR (RGS), CSA (RGS), EAC approved

**MAIN FEATURES**
- Integrated heatsink (RGC1A) or without heatsink (RG51A)
- 100 kA short circuit current rating
- Optional overtemperature protection (RGCTA)

**RGS1A / RGC1A**
- Product width 17.5 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Integrated output overvoltage protection
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus (RGC), UR (RGS), CSA (RGS), VDE, EAC, GL (up to 30 AAC) approved

**RGS1P / RGC1P**
- Product width 35 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A2s
- Control input: 4-20 mA, 0-10 VDC, 0-5 VDC, 1-5 VDC, external potentiometer
- LED indication for control and load status
- CE, cULus (RGC), UR (RGS), CSA (RGS), EAC approved

**MAIN FEATURES**
- Power control via a selectable switching mode (phase angle, full cycle, advance full cycle or soft start switching)
- Compact dimensions
- Reliability with integrated overvoltage protection
Our product range

<table>
<thead>
<tr>
<th>1-phase solid state relays</th>
<th>1-phase proportional controllers</th>
<th>2-pole solid state relays</th>
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</thead>
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<tr>
<td><strong>RM1A / RAM1A</strong></td>
<td><strong>RM1E</strong></td>
<td><strong>RK</strong></td>
</tr>
<tr>
<td>• Dimensions: 58.2 x 44.8 x 28.8 mm, panel mount</td>
<td>• Dimensions: 58.2 x 44.8 x 28.8 mm, panel mount</td>
<td>• Dimensions: 45 x 58 x 33 (44) mm, panel mount</td>
</tr>
<tr>
<td>• Rated operational voltage: up to 660 VAC</td>
<td>• Rated operational voltage: up to 660 VAC</td>
<td>• Independent control (RK2...) or common control (RK2...)</td>
</tr>
<tr>
<td>• Rated current: 25 AAC, 50 AAC, 75 AAC, 100 AAC, 125 AAC</td>
<td>• Rated current: 25 AAC, 50 AAC, 100 AAC</td>
<td>• Ratings: up to 660 VAC, 50 AAC /pole, 75 AAC /pole</td>
</tr>
<tr>
<td>• Control input: 4-32 VDC, 20-280 VAC</td>
<td>• Control input: 4-20 mA, 0-10 V</td>
<td>• Control input: 4-32 VDC</td>
</tr>
<tr>
<td>• CE, cULus, CSA, VDE (RAM), EAC, CCC approved</td>
<td>• CE, clUs, CSA, EAC approved</td>
<td>• CE, clUs, CSA, VDE, EAC approved</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Zero cross or Random switching
- Suitable for resistive, inductive or capacitive loads
- Integrated output overvoltage protection (RM1)

<table>
<thead>
<tr>
<th>3-phase solid state contactors</th>
<th>3-phase proportional controllers</th>
<th>3-phase monitoring relays</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RGC2A / RGC3A</strong></td>
<td><strong>RGC2P / RGC3P</strong></td>
<td><strong>DPA51 / DPA52</strong></td>
</tr>
<tr>
<td>• Product width 54 mm up to 70 mm, DIN mount</td>
<td>• Product width 54 mm up to 70 mm, DIN mount</td>
<td>• 81 x 17.5 x 67.2 mm; DIN-rail housing</td>
</tr>
<tr>
<td>• Rated operational voltage: up to 660 VAC</td>
<td>• Rated operational voltage: up to 660 VAC</td>
<td>• Phase sequence and phase loss, regenerated voltage detection</td>
</tr>
<tr>
<td>• Rated current: up to 75 AAC/pole (RGC2A), 65 AAC/pole (RGC3A) @ 40°C</td>
<td>• Rated current: up to 75 AAC/pole (RGC2P), 65 AAC/pole (RGC3P) @ 40°C</td>
<td>• 3 phase AC (own power supply)</td>
</tr>
<tr>
<td>• Control input: 5-32 VDC, 20-275 VAC (24-190 VDC)</td>
<td>• Control input: 0-20 mA, 4-20 mA, 12-20 mA, 0-10 V, 0-5 V, 1-5 V, external potentiometer</td>
<td>• Power supply 208 - 480 VAC</td>
</tr>
<tr>
<td>• CE, cULus, EAC, CCC approved</td>
<td>• CE, clUs, EAC, CCC approved</td>
<td>• CE, UL, CSA and CCC</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Integrated output overvoltage protection
- Optional monitoring for SSR and load circuit malfunction (RGC...)
- 100 kA short circuit current rating

<table>
<thead>
<tr>
<th><strong>MAIN FEATURES</strong></th>
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<th><strong>MAIN FEATURES</strong></th>
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<tbody>
<tr>
<td>Integrated output overvoltage protection</td>
<td>Phase angle, Distributed full cycle or Soft start as switching modes</td>
<td>Motors protection from reverse running and phase loss</td>
</tr>
<tr>
<td>Optional monitoring for SSR and load circuit malfunction (RGC...)</td>
<td>Integrated monitoring for SSR and load circuit malfunction</td>
<td>1 DIN module width. Suitable for NORM panels</td>
</tr>
<tr>
<td>100 kA short circuit current rating</td>
<td></td>
<td>No setup needed (plug&amp;play)</td>
</tr>
</tbody>
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Our product range

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<tr>
<th>3-phase monitoring relays</th>
<th>3-phase voltage relays</th>
<th>Cos φ relays</th>
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<tbody>
<tr>
<td><strong>DPA53</strong></td>
<td><strong>DPB51 / DPB52</strong></td>
<td><strong>DWA01</strong></td>
</tr>
<tr>
<td>- Dimensions: 81 x 17.5 x 67.2 mm DIN rail housing</td>
<td>- Dimensions: 81 x 17.5 x 67.2 mm DIN rail housing</td>
<td>- Dimensions: 81 x 22.5 x 99.5 mm DIN rail housing</td>
</tr>
<tr>
<td>- Phase sequence and phase loss, regenerated voltage detection</td>
<td>- Phase sequence and loss; overvoltage and undervoltage detection + time delay</td>
<td>- Direct current input or by CT</td>
</tr>
<tr>
<td>- Adjustable undervoltage setpoint</td>
<td>- 3 phase connection; 3 phase + neutral connection (DPB51)</td>
<td>- Power supply 208-480 VAC</td>
</tr>
<tr>
<td>- Power supply 208 - 240VAC; 380 - 480 VAC</td>
<td>- Power supply 208-480 VAC</td>
<td>- CE, UL, CSA and CCC</td>
</tr>
<tr>
<td>- CE, UL, CSA and CCC</td>
<td>- CE, UL and CCC</td>
<td>- CE, UL and CSA</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**

- Motors protection from reverse running and phase loss
- 1 DIN module width. Suitable for NORM panels
- Protects from failure due to overheating under low mains

**DWA01**

- Dimensions 83 x 22.5 x 99.5 mm DIN rail housing
- Cos φ monitoring relays
- Direct current input or by CT
- Power supply 208 - 240 VAC; 380 - 480 VAC
- CE, UL and CSA

**MAIN FEATURES**

- Detects any potentially dangerous change of the cosφ
- Overload detection (e.g.: blocked pipe)
- Easy setup

---

<table>
<thead>
<tr>
<th>Pump alternating relays</th>
<th>Star-delta timer</th>
<th>Timers</th>
</tr>
</thead>
<tbody>
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<td><strong>DAC51</strong></td>
<td><strong>DAA51 / DMB51</strong></td>
</tr>
<tr>
<td>- 81 x 35.5 x 67.2 mm; DIN-rail housing</td>
<td>- 81 x 17.5 x 67.2 mm; DIN-rail housing</td>
<td>- 81 x 17.5 x 67.2 mm; DIN-rail housing</td>
</tr>
<tr>
<td>- Pump alternating relay for 2 or 3 pumps</td>
<td>- Star/delta function for induction motors</td>
<td>- Delay on operate function (DAA), multifunction (DMB)</td>
</tr>
<tr>
<td>- Galvanically separated power supply, 24/48 VAC or 115/230 VAC</td>
<td>- Combined AC and DC power supply</td>
<td>- Combined AC and DC power supply</td>
</tr>
<tr>
<td>- 2x or 3x 5 A SPST output</td>
<td>- Repeatability: &lt; 0.2%</td>
<td>- Repeatability: &lt; 0.2%</td>
</tr>
<tr>
<td>- CE, UL and CSA</td>
<td>- CE, UL, CSA</td>
<td>- CE, UL, CSA, RINA (DMB51)</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**

- Built-in function for automatic rotation of the pumps
- Built-in delay for the second or third pump in case of simultaneous activation is required
- Built-in function for automatic rotation of the pumps

**DAC51**

- 81 x 17.5 x 67.2 mm; DIN-rail housing
- Star/delta function for induction motors
- Combined AC and DC power supply
- Repeatability: < 0.2%
- CE, UL, CSA

**MAIN FEATURES**

- Protects the motor from big inrush currents
- Star-delta control function with star and star-to-delta adjustable time
- Voltaic arc reduction during star to delta switch

**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
- Timing range 0.1 s to 100 h
- 5 A SPDT relay
## HVAC systems

### Our product range

<table>
<thead>
<tr>
<th>Power transducers</th>
<th>3-phase energy transducers</th>
<th>1-phase energy meters up to 45A</th>
<th>1-phase energy analyzers up to 45A</th>
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<td><strong>ET340</strong></td>
<td><strong>EM110</strong></td>
<td><strong>EM111</strong></td>
</tr>
<tr>
<td>- Dimensions: 83.5 x 45 x 98.5 mm DIN rail housing</td>
<td>- Dimensions: 3 DIN module; DIN-rail mounting</td>
<td>- 1 DIN module</td>
<td>- 1 DIN module</td>
</tr>
<tr>
<td>- Accuracy 0.5 % (voltage, current)</td>
<td>- Measurement of voltage, current, power, power factor, frequency, THD (V, A)</td>
<td>- Electromechanical totalizer</td>
<td>- Backlit touch LCD</td>
</tr>
<tr>
<td>- Measurement by CT and VT</td>
<td>- Bi-directional energy metering, 2 tariffs, cl. 1 (EN62053-1)</td>
<td>- Bi-directional energy metering, 7 digits cl. B (EN50470)</td>
<td>- Measurement of voltage, current, power, power factor and frequency</td>
</tr>
<tr>
<td>- Analogue, digital, pulse or serial outputs available</td>
<td>- MAIN FEATURES</td>
<td>- MAIN FEATURES</td>
<td>- MAIN FEATURES</td>
</tr>
<tr>
<td>- <strong>ET340</strong></td>
<td>- <strong>EM110</strong></td>
<td>- <strong>EM111</strong></td>
<td>- <strong>EM210</strong></td>
</tr>
<tr>
<td>- Dimensions: 3 DIN module; DIN-rail mounting</td>
<td>- Bi-directional energy metering, 7 digits cl. B (EN50470)</td>
<td>- 1 DIN module</td>
<td>- 4 DIN modules</td>
</tr>
<tr>
<td>- Measurement of voltage, current, power, power factor, frequency, THD (V, A)</td>
<td>- Measuring inputs: 230 to 400 V, AC, 5 A</td>
<td>- Electromechanical totalizer</td>
<td>- 3 DIN modules</td>
</tr>
<tr>
<td>- Bi-directional energy metering, 2 tariffs, cl. 1 (EN62053-1)</td>
<td>- MAIN FEATURES</td>
<td>- MAIN FEATURES</td>
<td>- MAIN FEATURES</td>
</tr>
<tr>
<td>- Measuring inputs: 208 to 400 V, AC, 65 A</td>
<td>- Self-powered</td>
<td>- Self-powered</td>
<td>- Self-powered</td>
</tr>
<tr>
<td>- MAIN FEATURES</td>
<td>- Pulse output</td>
<td>- Pulse output or RS485 Modbus or M-Bus port</td>
<td>- Pulse output</td>
</tr>
<tr>
<td>- <strong>EM210</strong></td>
<td>- <strong>EM24 DIN</strong></td>
<td>- <strong>EM330</strong></td>
<td>- <strong>EM340</strong></td>
</tr>
<tr>
<td>- Dimensions: 4 DIN modules or 72 x 72 mm</td>
<td>- 3-phase energy meters with direct connection</td>
<td>- 3 DIN modules</td>
<td>- 3 DIN modules</td>
</tr>
<tr>
<td>- Installation: DIN-rail or panel mounting in a single product</td>
<td>- Current input up to 65 A or 5 A</td>
<td>- Backlit touch LCD</td>
<td>- Backlit touch LCD</td>
</tr>
<tr>
<td>- 3-phase energy meters with CT/VT connection</td>
<td>- Class B (kWh) acc. to EN50470</td>
<td>- Measurement of voltage, current, power, power factor and frequency</td>
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</tr>
<tr>
<td>- Measurement of voltage, current, power, power factor and frequency</td>
<td>- Pulse open collector output</td>
<td>- Bi-directional energy metering, 3x 8-digit, cl. B (EN50470)</td>
<td>- Bi-directional energy metering, 3x 8-digit, cl. B (EN50470)</td>
</tr>
<tr>
<td>- Pulse output</td>
<td>- Modbus RTU or Ethernet, M-bus (wired and wireless) or Dupline® port</td>
<td>- Measuring inputs: 230 to 400 V, AC, 5 A</td>
<td>- Measuring inputs: 230 to 400 V, AC, 65 A</td>
</tr>
<tr>
<td>- RS485 Modbus RTU, high speed (up to 115kbps)</td>
<td>- MAIN FEATURES</td>
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<td>- MAIN FEATURES</td>
</tr>
<tr>
<td>- <strong>EM24 DIN</strong></td>
<td>- <strong>EM330</strong></td>
<td>- <strong>EM340</strong></td>
<td>- <strong>ET340</strong></td>
</tr>
<tr>
<td>- 4 DIN modules</td>
<td>- 3-phase energy meters with direct connection</td>
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<td>- 3-phase energy meters with direct connection</td>
<td>- Current input up to 65 A or 5 A</td>
<td>- Backlit touch LCD</td>
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<tr>
<td>- <strong>EM330</strong></td>
<td>- <strong>EM340</strong></td>
<td>- <strong>ET340</strong></td>
<td>- <strong>ET340</strong></td>
</tr>
<tr>
<td>- Dual tariff management</td>
<td>- Pulse output or RS485 Modbus or M-Bus port</td>
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</tr>
<tr>
<td>- sealable terminal covers</td>
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</tr>
<tr>
<td>- <strong>ET340</strong></td>
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</tr>
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**CPT-DIN**
- **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**

**ET340**
- **Dimensions:** 3 DIN module; DIN-rail mounting
- **Measurement:** of voltage, current, power, power factor, frequency, THD (V, A)
- **Bi-directional energy metering,** 2 tariffs, cl. 1 (EN62053-1)
- **Measuring inputs:** 208 to 400 V, AC, 65 A

**EM110**
- **1 DIN module**
- **Electromechanical totalizer**
- **Bi-directional energy metering,** 7 digits cl. B (EN50470)
- **Measuring inputs:** 115/230 VAC, 32A (max 45A)

**EM111**
- **1 DIN module**
- **Backlit touch LCD**
- **Measurement:** of voltage, current, power, power factor and frequency
- **Bi-directional energy metering,** 7 digits cl. B (EN50470)
- **Measuring inputs:** 115/230 VAC, 32A (max 45A)

**ET340**
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- **Measurement:** of voltage, current, power, power factor and frequency
- **Bi-directional energy metering,** 7 digits cl. B (EN50470)
- **Measuring inputs:** 115/230 VAC, 32A (max 45A)
### Capacitive sensors

#### CA18
- Dimensions: M18 / M30
- Tripleshield™ sensor protection
- Plastic housing, DC and AC versions
- Sensing distance 0.5-12 mm
- CE, UL, CSA approved

**MAIN FEATURES**
- Optimised features for level detection in plastic and rubber applications
- Sensing face can withstand temperatures up to 120°C
- Protection: short circuit, transient and reverse polarity

#### CA30
- 4-12 mm sensing distance adjustable
- Time delay on operate or release, up to 10 minutes adjustable
- Multi voltage supply: 20.4-255 VAC/DC
- 2 A, SPDT relay output
- Housing M30 x 100 mm
- CE, cULus approved

**MAIN FEATURES**
- Level sensor for solid, fluid or granulated substances
- IP67, NEMA 1, 2, 4, 4X, 5, 6, 6P, 12

#### CA30CA.. series
- High EMC Immunity
- M30 mm housing, easy to mount
- Power supply 10-40 VDC, 200 mA NPN or PNP, NO and NC
- CE, UL, CSA approved

**MAIN FEATURES**
- Reliable detection of pellets in the burner’s feeding system
- Dust alarm output
- Temperature alarm output at 60°C

#### CA18../CA30..IO series
- Dimensions: M18 / M30 (Plastic)
- 4th generation TRIPLESHIELD™ Technology
- IO-link communication with time, diagnostics and logic functions
- Sensing distance up to 30 mm
- CE, cULus approved

**MAIN FEATURES**
- High EMC immunity
- ESD ratings up to 40 KV
- Sensing face temperature up to 120°C
- Best immunity towards Inverters

### Capacitive sensors with IO-Link

#### WM15
- 96 x 96 mm panel mounting housing
- Accuracy 0.5 % (voltage, current)
- Class I EN61032-21 and Class B EN50470-3 (MID)
- Self or aux. power supply
- Digital output and serial port
- Optical port
- CE, MID (for 3-phase with Neutral and Aaron connections), cULus approved

**MAIN FEATURES**
- Suitable to measure generated and consumed energy, with relevant hourmeters
- Easy and error-proof programming
- Fast commissioning in few minutes thanks to the freeware UCS software or Android App

#### WM20
- 96 x 96 mm panel mounting housing
- Accuracy 0.2 % (voltage, current)
- Class 0.5S (kWh)
- Universal power supply
- Front protection degree IP65, NEMA4X, NEMA12
- cULus approved

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

#### WM30
- 96 x 96 mm panel mounting housing
- Accuracy 0.2 % (voltage, current)
- Class 0.5S (kWh)
- Universal power supply
- Front protection degree IP65, NEMA4X, NEMA12
- Optional analogue and digital outputs
- cULus

**MAIN FEATURES**
- Modular housing to build the instrument according to the real application needs
- Modbus and BACnet (both RS485 or Ethernet), Profinet DPV0, and Ethernet/IP communication port available

#### WM40
- 96 x 96 mm panel mounting housing
- Accuracy 0.2 % (voltage, current)
- Class 0.55 (kVA)
- Universal power supply
- Front protection degree IP65, NEMA4X, NEMA12
- Optional analogue and digital inputs
- Optional analogue and digital outputs
- cULus

**MAIN FEATURES**
- Built-in data logger for instantaneous variables, dmd profiles and events
- Modular housing to build the instrument according to the real application needs
- Modbus and BACnet (both RS485 or Ethernet), Profinet DPV0, and Ethernet/IP communication port available

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

Our product range

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<tr>
<th>Conductive level systems</th>
<th>Conductive level probes</th>
<th>Capacitive level sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CLD / CLP</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Exact level detecting with insulated electrodes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• SPDT 8 A relay output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 24-240 AC/DC or 230 AC or 115 AC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• CE, UL, CSA approved</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CLH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 3-5 stainless steel electrodes</td>
<td></td>
<td></td>
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<tr>
<td>• User defined electrode length</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Insulation available in Kynar or Polyolefine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 1 1/2” pipe thread mounting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• IP65/68 rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CD34CNF</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Dimensions 8 x 16 x 34 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Power supply: 10 - 30 DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Output: NPN/PNP/NO or NC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Connectivity: cable or M8 4-pin Pigtail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Approvals/Marks: CE - cULus - ECOUB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Detection of condensed water from air conditioning system
- Easy to install with simple electrodes
- Wide sensitivity 250 Ω to 500 kΩ

<table>
<thead>
<tr>
<th>Conductive level probes</th>
<th>Capacitive sensors</th>
<th>Inductive proximity sensors</th>
<th>Inductive proximity sensors with IO-Link</th>
</tr>
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<tbody>
<tr>
<td><strong>CLD / CLP</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>CLH</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CD34CNF</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
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**MAIN FEATURES**
- Detection of condensed water from air conditioning system
- Easy to install with simple electrodes
- Wide sensitivity 250 Ω to 500 kΩ

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<th>Inductive proximity sensors</th>
<th>Inductive proximity sensors with IO-Link</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CD50</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ICB12 / ICB18</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ICB12..IO / ICB18..IO / ICB30..IO</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Detection of condensed water from air conditioning system
- Wide sensitivity 250 Ω to 500 kΩ

**MAIN FEATURES**
- High precision and reliability thanks to the microprocessor technology
- Eco-friendly potting material
- Short-circuit and overload LED indication
- Laser engraved on front cap, permanently legible

**MAIN FEATURES**
- 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
- IO-Link v1.1 and smart sensor profile

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

### Photoelectric level sensors

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP / VPA / VPB</td>
<td>3/8&quot; pipe thread x 70.5 (74 mm) housing&lt;br&gt;Power supply 10-40 VDC, 200 mA NPN or PNP, NO and NC&lt;br&gt;CE approved</td>
</tr>
</tbody>
</table>

### Switching power supplies

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDM</td>
<td>Plastic and metal housing with compact size&lt;br&gt;Output power 30 W to 240 W&lt;br&gt;Universal input range of 110-240 VAC or up to 370 VDC&lt;br&gt;Short Circuit, overload, overvoltage and over temperature protection&lt;br&gt;CE (all), cULus (all except 240 W) and cURus (only 120 W), UL1310 Class 2 (up to 72 W, for 72 W only for 24 VDC models)</td>
</tr>
<tr>
<td>SPD</td>
<td>Output power 5 W to 480 W&lt;br&gt;Universal input range of 110-240 VAC or up to 370 VDC&lt;br&gt;Short Circuit, overload and overvoltage protection&lt;br&gt;PFC &gt; 100 W&lt;br&gt;CE, cULus, cURus, UL1300 Class 2 (up to 72 W), ISA 12.12.1 Class I Div2, TVV, CCC</td>
</tr>
<tr>
<td>SPM</td>
<td>DIN rail housing&lt;br&gt;Low profile models&lt;br&gt;Universal input 90-264 VAC / 127 VDC – 370 VDC&lt;br&gt;CE, cULus, cURus</td>
</tr>
<tr>
<td>SPPC</td>
<td>Universal Input 115 / 230Vac&lt;br&gt;Output Voltages: 5V, 12V, 24V and 48V&lt;br&gt;Output powers from 25 to 800W&lt;br&gt;Wide temp range from -25°C to +70°C (&lt;13°F to 158°F)&lt;br&gt;CE, cULus</td>
</tr>
</tbody>
</table>

### Enclosed power supplies

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDC</td>
<td>Compact dimensions, 120 W/240 W/480 W&lt;br&gt;120 W - 12/24 VDC ; 240 W - 24 VDC ; 480 W - 24/48 VDC&lt;br&gt;High efficiency &gt;90%, and operating temperature -25°C to 70°C&lt;br&gt;Universal input 90 VAC – 264 VAC / 127 VDC – 370 VDC&lt;br&gt;CE, cULus and cURus</td>
</tr>
<tr>
<td>SPM</td>
<td>DIN rail housing&lt;br&gt;Low profile models&lt;br&gt;Universal input 90-264 VAC / 120-370 VDC&lt;br&gt;Single phase and battery charger versions available&lt;br&gt;CE, cULus, cURus, UL1310 Class 2 (up to 91.2 W), ISA 12.12.1 Class I Div2, TVV</td>
</tr>
<tr>
<td>SPPC</td>
<td>Universal Input 115 / 230Vac&lt;br&gt;Output Voltages: 5V, 12V, 24V and 48V&lt;br&gt;Output powers from 25 to 800W&lt;br&gt;Wide temp range from -25°C to +70°C (&lt;13°F to 158°F)&lt;br&gt;CE, cULus</td>
</tr>
</tbody>
</table>

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**Main Features**

- **VP / VPA / VPB**: Detection of condensed water from Air-conditioning system<br>   Reliable detecting of water even with oil presence
- **SPDM**: Save up to 20% panel space<br>   High efficiency and wide operating temperature<br>   Screw, spring terminal connectors
- **SPD**: DC OK signal<br>   Parallel connection<br>   Screw, spring or detachable terminal connectors
- **SPDC**: 150% power boost for up to 3 seconds<br>   In built active-PFC<br>   Parallel connection selection switch
- **SPM**: Operating temperature w/o derating -25°C to +60°C<br>   Short circuit and Overload protection<br>   High efficiency (up to 89%)
- **SPPC**: Fully protected output: OVP, SCP<br>   Very compact dimension<br>   PFC versions available from >75W
# Our product range

<table>
<thead>
<tr>
<th>AC current transformers</th>
<th>Slim industrial relays</th>
<th>Electromechanical relays</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E83</strong></td>
<td><strong>RSLM</strong></td>
<td><strong>RMIA series</strong></td>
</tr>
<tr>
<td>56 x 22.5 x 49 mm; DIN-rail housing</td>
<td>SPST or SPDT option</td>
<td>2 x 10 A and 4 x 5 A versions</td>
</tr>
<tr>
<td>7 input ranges from 5 A to 50 A AC</td>
<td>Contact rating for 6 A, 250 VAC/30 VDC</td>
<td>DC coils: 6-220 V</td>
</tr>
<tr>
<td>Output 4-20 mA DC</td>
<td>Coil voltage from 12 VDC to 60 VDC</td>
<td>AC coils: 6-380 V</td>
</tr>
<tr>
<td>No power supply</td>
<td>Suitable for use with PLCs, valves actuation or solenoids</td>
<td>Free wheeling diode integrated</td>
</tr>
<tr>
<td>CE, cULus</td>
<td>VDE, CQC, cULus, CSA</td>
<td>Sockets for PCB or DIN rail installations</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Easy PLC interfacing
- Automatic output scaling
- LED indication

**MAIN FEATURES**
- 5 mm ultra slim width
- DIN rail mount (ZRLS socket) or PCB mount (ZRLP)
- Surge voltage of up to 6 kV

**MAIN FEATURES**
- Contacts suitable for High Inrush loads
- Very compact size
- LED, latchable mechanical push button and flag as standard

---

**Electromechanical relays**

<table>
<thead>
<tr>
<th><strong>RCP series</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 10 A and 3 x 10 A contacts</td>
</tr>
<tr>
<td>Industry standard relay</td>
</tr>
<tr>
<td>High immunity to supply voltage fluctuation</td>
</tr>
<tr>
<td>DC coils: 6-110 V</td>
</tr>
<tr>
<td>AC coils: 6-230 V</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Octal and Undecal
- LED, latchable mechanical push button and flag as standard
- Wide selection of sockets for PCB and DIN rail
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Hadsten

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Zejtun

ITALY
Carlo Gavazzi Controls SpA
Belluno

LITHUANIA
Uab Carlo Gavazzi Industri Kaunas
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