Building Automation

Solutions for

Home Automation
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 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 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 four product lines: Sensors, Switches, Controls and Fieldbuses.

Our wide array of products includes sensors, monitoring relays, timers, solid-state relays, electronic motor controllers, energy management equipment 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 materials handling equipment, door and entrance control systems, lifts and escalators, as well as heating, ventilation and air-conditioning devices.

Our offer for the Home Automation consists of innovative solutions, designed to make a comfortable living environment, according to your mood and requirements as well as weather conditions.

Comfort, Security, Control, Flexibility and Ease are the synthesis of our commitment for an “intelligent” Home Automation system.

Lighting control
Climate control
Blind and awning control
Alarms
Energy savings
DESIGNED TO MEET MARKET REQUIREMENTS

The new home automation system by Carlo Gavazzi is the evolution of the well-known smart-house system: it looks after your houses in the best possible way, making them comfortable for you and your loved ones. It combines this comfortable living with energy saving, using state-of-the-art technology to improve your well-being and to reduce your carbon footprint.

The complete range of products is designed in Italy.

The system is based on a centralised structure, where the controller is the “brain” that supervises all the domestic functions such as lights, temperatures, rollerblinds, shutters and intruder, gas and water leaks alarms.

New modules and functionalities can be added at any time, making the home “alive” and letting you adapt it according to your wishes, which might change over time.

It also allows you to be aware of energy consumption, providing diagrams of current consumption as well as the logging of what has been consumed in the previous days, months or years. All this data is easily accessible using smart-phones, PCs or tablet PCs.

Retrofit installations can also be made when using this new Carlo Gavazzi system, as it features a full range of wireless products that can be used when wiring is not possible or not desired.

The new web server complements traditional methods of managing sophisticated home automation technologies. It is embedded into the SH2WEB controller and it is completely configurable so that you can select your own themes.

The webserver is also designed as webapp to be accessible via any smartphone, tablet pc.

The intuitive, user-friendly interface allows the control of lights, rollerblinds, alarms, timers, temperatures and more, both remotely and on site, all from a multi-function device.

Furthermore, the webserver/webapp enable access to the datalogger where energy data, temperatures and other events are stored, in order to have a clear overview of which appliances are on and how much they are consuming.
Home Automation

Bus intelligence made by experience

1 2 3

Sequences Scheduler and Real time clock Simulated habitation Up&Down control and Shadowing Heating and Cooling control Fan control

Bus and power in the same cable
The bus and power wires follow the same logical path. The “switch wires” needed in conventional installations can be eliminated by use of de-central relays. The installation is fast and simple and last-minute changes are easily accommodated. No special cable or cable termination is required for the bus.

Fast commissioning with no addressing
One of the most innovative features of this system is that no addressing of modules is needed. The installer only has to mount all the components, launch a network scan and the system will automatically find and recognize the connected devices, making the correct association or addressing. This will result in time and cost savings, besides providing an error-free configuration process.
Diagnostic function
Immediate trouble-shooting is assured as the system monitors all the connected devices and advises if one is faulty. The load of the bus is constantly monitored and any anomaly is at once detected and reported.
All the information about short-circuits, bus voltage and load, noise level and quality of the bus signals is logged in a file both locally and remotely accessible.
This can be checked anytime, providing effective time and money savings.

Easy configuration software
The system configuration can be easily done by means of its wizard tools. The user-friendly interface of this software guides the user in the creation of the pre-defined functions.
At the same time, thanks to many basic functions, the most skilled user can also create customized applications.
Test modes are getting easier by the several debug features available.
Carlo Gavazzi offers integrated lighting automation and control. Lighting sets the perfect scene and creates the desired ambience for any occasion. Whether it is a movie night, an intimate dinner for two or a party with friends, lighting establishes the right mood. The lights can create pre-programmed scenes to simulate the chosen lifestyle patterns. Dimmers do not just set the right atmosphere and create specific entertainment options, they can save money too. Most of the time we do not need to set our lights to full brightness to light a room, and if you dim your lights you are using less energy to run them. This is the aim of the new dimming technology by Carlo Gavazzi, in addition to the integration of brand new energy-saving alternatives such as LED lamps. The garden lights can be turned on by a light level sensor, whereas the entrance lights can be activated by a movement sensor. Occupancy sensing, which turns off lights when they are not needed, makes Carlo Gavazzi solutions ideal also for special applications such as light management in corridors and staircases. Comfort and energy saving at a single touch are assured, without sacrificing style or convenience.
Carlo Gavazzi maintains your home at a comfortable level at all times, monitoring temperature and humidity levels automatically. There is no need to get up or even be at home to adjust the temperature: with our Home Automation range of products you can control multiple zones from one location and easily pre-set temperature set points. You can keep your home at a more energy efficient temperature while you are out and programme it to automatically adjust to more comfortable levels by the time you get home.

Coming home early? Use your mobile phone or PC to control the climate remotely, even monitoring the wine cellar or greenhouse temperature and humidity level.

The Home Automation system by Carlo Gavazzi also helps you to save energy and money: demand-based energy use can be achieved via a timer program with a temperature profile or even via a presence signal. As the temperature variables of all the rooms are available centrally via the bus system, heating and cooling energy can be generated according to demand and with a high level of efficiency.
Home Automation

Blind and awning control

The installation of intelligent control technology in houses allows for the flexible control of blinds and shutters. In this way you can select various control options as:

- Classic control with conventional buttons and switches
- Control from remote PCs and smartphones
- Connection of multiple blinds/shutters to groups
- Realization of central functions such as “all up” buttons, “all blinds on the south side up” or similar

Thanks to full flexibility, it is possible to change switch assignment. Shutter-groups can be created at any time through our configuration software.

Furthermore, automation can be specified to respond to a number of different factors:

- Solar control, where the device operates automatically when a certain intensity of light is received by the sensor.
- Timers may be specified.
- An anemometer (wind speed sensor) is fitted so that the blind is retracted in windy conditions.
- Rain sensors may be used in order not to wet the blinds or dirty the window glass.
Carlo Gavazzi protects your home. A water leakage in your kitchen or laundry room can be immediately detected by a sensor at floor level and the water supply will be interrupted, preventing loss and damage. At the same time an SMS message will promptly inform you when you are away from home.

Smoke detectors at different locations in your house are the main elements in the fire alarm system, and can be combined with other functions, for example lights can be switched on and fans switched off in case of fire. The intruder alarms can be programmed so that house lights flash when there is a security breach, as well as sounding the siren. Switching lights on and off in each room at two-second intervals is psychologically distracting and makes it extremely difficult for an intruder to search for jewellery and information such as credit card details. It also draws attention to the house from outside, further deterring any intruder from their actions. The system can also play back loud music or alarm sounds in each room, to further persuade the intruder to leave. Naturally, the police can be notified automatically, along with key-holders and other designated people.
Incorporating a home automation system into a new or existing structure makes it easier to reduce energy consumption, also in combination with energy efficient lighting, Energy Star appliances and alternative energy sources. Another effortless way to enhance the energy efficiency in your home is to take control of your energy consumption, by finding out exactly how much you are using.

Many electricity companies offer lower rates during off-peak hours, such as evenings and weekends. Using appliances such as washing machines, dryers, air conditioners and dishwashers during these hours can lead to substantial savings on your electricity bill.

These real-time energy usage measurements will lead you to become more efficient with your energy consumption needs and will result in significant energy savings.

The system reads and logs the energy consumption of the whole installation or of a single load.

Data can be accessed anytime by means of a webserver/webapp and shown as instantaneous values, or in the form of graphs and/or diagrams.
Scenarios

Entertainment scenario
- TV and Home Theatre
- Music Surround
- Lights
- Heating or Air Conditioning
- Roller Blinds

Holidays scenario
- Heating
- Alarms
- Roller Blinds
- Doors and Windows
- Automatic Irrigation
- Automatic turn on/off of lights

Night & Day scenario
- Roller Blinds & Awnings
- Exterior Lighting
- Heating or Air Conditioning
- Automatic Irrigation (at the set time)
Home Automation

The Carlo Gavazzi smart-house system is based on a central CPU, the SH2WEB24, a Linux based embedded PC that manages all the smart functions.

It is programmed by means of powerful software, the SH tool.

The SH2WEB24 has Ethernet communication capability in order to be remotely controlled and monitored by smart-devices/PCs. It also acts as a datalogger, which can record any kind of value/event coming from the many buses it can be connected to (Wireless and Dupline buses, two RS485 ports).

The master unit is also provided with an sd-card and USB port, which allow data uploading/downloading and system configurations.

Where wired Internet access is not available, Carlo Gavazzi provides a specific mobile modem to be added to the SH2WEB24. This modem makes it possible to control any remote installation, whether it be a cabin in the mountains or a house at the seaside.

If the SH2WEB24 can be considered the “brain” of the smart-house system, the two bus generators are the pulsating “heart” that makes all the information flow.

They are connected to the SH2WEB24 via the high speed bus that is present both on the local bus and on the terminals at the bottom.

This means that the connection is very fast and easy in a cabinet, since the modules just have to be plugged together without any wiring.

At the same time it is very straightforward if the bus generators have to be mounted in different cabinets.

Up to 7 bus generators can be connected to one SH2WEB24.

<table>
<thead>
<tr>
<th>Controller</th>
<th>Wired bus generator</th>
<th>Wireless bus generator</th>
<th>DALI bus generator</th>
<th>Universal mobile modem</th>
<th>Digital input module</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH2WEB24</td>
<td>SH2MCG24</td>
<td>SH2WBU230</td>
<td>SB2DALI230</td>
<td>SH2UMMF124</td>
<td>SH2D10V424</td>
</tr>
</tbody>
</table>
**SH2MCG24 - the wired bus generator of smart Dupline®**

The SH2MCG24 module is the smart Dupline bus generator, which provides the dupline bus on the local bus and on the terminals at the top.

Thanks to this, the DIN-rail slave modules (dimmers, relays, rollerblind modules, etc...) can simply be plugged into the SH2MCG24, without the need for any wiring.

The decentral modules, such as light switches, PIR sensors and temperature display, are connected to the SH2MCG24 with the two wires coming out from the terminals at the top.

**SH2WBU230 - the wireless bus generator of WiDup**

The smart-house system also provides a solution where it is not possible to use existing wiring, especially during the renovation of buildings.

The SH2WBU230 is the wireless bus generator that can control wireless light switches and output relay modules.

The wireless bus is based on the standard IEEE 802.15.4 @2.4Ghz.

Up to 250 modules can be managed by one SH2WBU230.

The open-space operating distance is 100 metres.
Home Automation

Our product range

<table>
<thead>
<tr>
<th>Controller</th>
<th>Wired bus generator</th>
<th>Wireless bus generator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SH2WEB24</strong></td>
<td>• Master unit: home automation functions and energy data logging configurable by software</td>
<td>• Connection to SH2WEB24 via internal bus or terminals via the high speed bus</td>
</tr>
<tr>
<td></td>
<td>• Two RS485 communication ports (Modbus)</td>
<td>• Up to 7 SH2MC2G24 can be connected on the same network, considering the sum of SH2MC2G24 and SH2WB2U</td>
</tr>
<tr>
<td></td>
<td>• One Ethernet port</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Two multi purpose USB 2.0 ports</td>
<td>• Connection to SH2WEB24 via internal bus or terminals via the high speed bus</td>
</tr>
<tr>
<td></td>
<td>• Micro SD</td>
<td>• Maximum slave number: 250</td>
</tr>
<tr>
<td><strong>MAIN FEATURES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Dimensions: 2-DIN modules</td>
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<th><strong>Universal mobile modem</strong></th>
<th><strong>Digital input module</strong></th>
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<tr>
<td><strong>SH2MC2G24</strong></td>
<td><strong>SH2UMMF124</strong></td>
<td><strong>SH2INDI424</strong></td>
</tr>
<tr>
<td>• Connection to SH2WEB24 via internal bus or terminals via the high speed bus</td>
<td>• Universal modem extension for SH2WEB24</td>
<td>• 4 digital inputs NPN, PNP, voltage free</td>
</tr>
<tr>
<td></td>
<td>• Up to 7 SH2MC2G24 can be connected on the same network, considering the sum of SH2MC2G24 and SH2WB2U</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Connection to SH2WEB24 via internal bus</td>
<td>• The 4 inputs can be configured as contact or counter</td>
</tr>
<tr>
<td></td>
<td>• Compatibility with quad-band GSM-GPRS-EDGE</td>
<td>• LED indication for power supply, dupline bus, input activated</td>
</tr>
<tr>
<td></td>
<td>• Compatibility with dual-band UMTS-GPRS-HSPA</td>
<td>• Connection to other cabinet modules via local bus</td>
</tr>
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<table>
<thead>
<tr>
<th><strong>Wireless bus generator</strong></th>
<th><strong>DALI bus generator</strong></th>
<th><strong>Digital input module</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SH2WB2U230</strong></td>
<td><strong>SB2DALI230</strong></td>
<td><strong>SH2INDI424</strong></td>
</tr>
<tr>
<td>• Wireless transmission based on IEE 802.15.4, @ 2.4 GHz</td>
<td>• Interfaces the Dupline® bus to standard DALI lighting actuators</td>
<td>• 4 digital inputs NPN, PNP, voltage free</td>
</tr>
<tr>
<td></td>
<td>• Maximum slave number: 250</td>
<td>• The 4 inputs can be configured as contact or counter</td>
</tr>
<tr>
<td></td>
<td>• Up to 4 SH2WB2U230 can be connected on the same network</td>
<td>• LED indication for power supply, dupline bus, input activated</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connection to other cabinet modules via local bus</td>
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<tr>
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</tr>
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</tr>
</tbody>
</table>

**DALI bus generator**

**Universal mobile modem**

**Digital input module**

4 inputs
## Our product range

<table>
<thead>
<tr>
<th>Output module</th>
<th>Relay module</th>
<th>Relay module</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SH2SSTR424</strong></td>
<td><strong>SH2RE16A4/SH2RE1A424</strong></td>
<td><strong>SH2RE16A2E230</strong></td>
</tr>
<tr>
<td>• 4 triac output</td>
<td>• 4 separate outputs relay</td>
<td>• 2 outputs relay</td>
</tr>
<tr>
<td>• Module load: 4 x 10 W</td>
<td>• LED-indications for supply, bus and outputs status</td>
<td>• Energy reading</td>
</tr>
<tr>
<td>• LED-indications for supply, bus and outputs status</td>
<td>• Connection to other cabinet modules via local bus</td>
<td>• LED-indications for supply, bus and outputs status</td>
</tr>
<tr>
<td>• Connection to other cabinet modules via local bus</td>
<td>• Push button for local on/off switching</td>
<td>• Connection to other cabinet modules via local bus</td>
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<td>• Push button for local on/off switching</td>
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<td>• Push button for local on/off switching</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Dimensions: 2-DIN modules
- DC power supply

<table>
<thead>
<tr>
<th><strong>SH2RE16A2E230</strong></th>
<th><strong>BDA-RE13A-U</strong></th>
<th><strong>SHDRODC230</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• 2 outputs relay</td>
<td>• Small sized single relay output</td>
<td>• Up/down control of 1 AC rollerblind motor</td>
</tr>
<tr>
<td>• Energy reading</td>
<td>• Load: 16 A/250 VAC</td>
<td>• Up/down interlocking for motor</td>
</tr>
<tr>
<td>• LED-indications for supply, bus and outputs status</td>
<td>• Withstands 130 A inrush current</td>
<td>• AC power supply</td>
</tr>
<tr>
<td>• Connection to other cabinet modules via local bus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Push button for local on/off switching</td>
<td></td>
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</tbody>
</table>

**MAIN FEATURES**
- Dimensions: 2-DIN modules
- SH2RE16A4: bus supplied
- SH2RE1A424: DC power supply

<table>
<thead>
<tr>
<th><strong>BDA-RE13A-U</strong></th>
<th><strong>SHDRODC230</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Small sized single relay output for eurobox mounting</td>
<td>• Up/down control of 1 AC rollerblind motor</td>
</tr>
<tr>
<td>• Energy reading</td>
<td>• Up/down interlocking for motor</td>
</tr>
<tr>
<td>• Range up to 100 m in open air</td>
<td>• AC power supply</td>
</tr>
<tr>
<td>• Load: 16 A/250 VAC</td>
<td></td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Wireless transmission based on IEEE802.15.4 @ 2.4 GHz
- Programmable routing function

<table>
<thead>
<tr>
<th><strong>Wireless relay with energy reading</strong></th>
<th><strong>Decentral output module</strong></th>
<th><strong>Decentral roller blind module</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHDWRE16AE230</strong></td>
<td><strong>BDA-RE13A-U</strong></td>
<td><strong>SHDRODC230</strong></td>
</tr>
<tr>
<td>• Small sized single relay output</td>
<td>• Small sized single relay output</td>
<td>• Up/down control of 1 AC rollerblind motor</td>
</tr>
<tr>
<td></td>
<td>• Load: 16 A/250 VAC</td>
<td>• Up/down interlocking for motor</td>
</tr>
<tr>
<td></td>
<td>• Withstands 130 A inrush current</td>
<td>• AC power supply</td>
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</tbody>
</table>

**MAIN FEATURES**
- Bus powered
- Design for mounting in eurobox
- Relay load 5 A
## Home Automation

### Our product range

<table>
<thead>
<tr>
<th>Roller blind modules for AC/DC motor</th>
<th>Dimmer module with energy reading</th>
<th>Dimmer module up to 500 W</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SH2ROAC224 / SH2RODC224</strong></td>
<td><strong>SH2D500WE230</strong></td>
<td><strong>SH2D500W1230</strong></td>
</tr>
<tr>
<td>• Up/down control of 2 AC / DC rollerblind motors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• LED indication for power supply, dupline bus, motor up, motor down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Connection to other cabinet modules via local bus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Push button for local on/off switching</td>
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<td>• Dimensions: 2-DIN modules</td>
</tr>
<tr>
<td>• DC power supply</td>
<td>• Universal dimmer switch for R, L, C up to 500 W and LED loads</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Integrated heat sink for temperature dissipation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Energy reading</td>
<td></td>
</tr>
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<td></td>
<td>• Connection to other cabinet modules via local bus</td>
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</tbody>
</table>

### Analogue input modules

<table>
<thead>
<tr>
<th>Dimmer module 1-10 V</th>
<th>Transparent module</th>
<th>Analogue input modules</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SH2D10V424</strong></td>
<td><strong>SH1DUPFT</strong></td>
<td><strong>SHPINV2T1P124 / SHPIN1P1</strong></td>
</tr>
<tr>
<td>• Switching and dimming adjustable ballasts 1 to 10 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 4 independent dimmable outputs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• LED-indications for supply, bus and outputs status</td>
<td></td>
<td></td>
</tr>
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<td><strong>MAIN FEATURES</strong></td>
</tr>
<tr>
<td>• Dimensions: 2-DIN modules</td>
<td>• Dimensions: 1-DIN module</td>
<td>• SHPINV324: three 0-10 V input</td>
</tr>
<tr>
<td>• DC power supply</td>
<td>• No supply is needed</td>
<td>• SHPINV2T1P124: two voltage input, one thermistor and one resistor input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• SHPIN1P1: one thermistor and one resistor input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bus powered</td>
</tr>
</tbody>
</table>

### Roller blind modules

<table>
<thead>
<tr>
<th><strong>SH2ROAC224 / SH2RODC224</strong></th>
<th><strong>SH2D500WE230</strong></th>
<th><strong>SH2D500W1230</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Universal dimmer switch for R, L, C up to 500 W and LED loads</td>
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<td>• Integrated heat sink for temperature dissipation</td>
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<tr>
<td>• Dimensions: 2-DIN modules</td>
<td>• Dimensions: 2-DIN modules</td>
<td>• Dimensions: 2-DIN modules</td>
</tr>
<tr>
<td>• 230 V supplied</td>
<td></td>
<td>• Universal dimmer switch for R, L, C up to 500 W and LED loads</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Integrated heat sink for temperature dissipation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Connection to other cabinet modules via local bus</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Push button for local on/off switching</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>MAIN FEATURES</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dimensions: 2-DIN modules</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 230 V supplied</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dimmer module

<table>
<thead>
<tr>
<th><strong>SH2D10V424</strong></th>
<th><strong>SH1DUPFT</strong></th>
<th><strong>SHPINV2T1P124 / SHPIN1P1</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transparent dupline module</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The dupline bus is present on the top/bottom connectors and internal bus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Connection to other cabinet modules via local bus</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MAIN FEATURES</strong></td>
<td><strong>MAIN FEATURES</strong></td>
<td><strong>MAIN FEATURES</strong></td>
</tr>
<tr>
<td>• Dimensions: 2-DIN modules</td>
<td>• Dimensions: 1-DIN module</td>
<td>• SHPINV324: three 0-10 V input</td>
</tr>
<tr>
<td>• DC power supply</td>
<td>• No supply is needed</td>
<td>• SHPINV2T1P124: two voltage input, one thermistor and one resistor input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• SHPIN1P1: one thermistor and one resistor input</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bus powered</td>
</tr>
</tbody>
</table>
# Our product range

<table>
<thead>
<tr>
<th>Analogue output module</th>
<th>Light switch interfaces</th>
<th>Digital input module</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHPOUTV224</strong></td>
<td><strong>BDB-INCON4-U / BDB-IOCON4-U</strong></td>
<td><strong>BDD-INCON4-U</strong></td>
</tr>
<tr>
<td>- Output modules with two 0-10 V outputs</td>
<td>- Small-sized 4 or 8 I/O modules</td>
<td>- 4 contacts or NPN transistor inputs</td>
</tr>
<tr>
<td>- Small dimensions for decentralized installations</td>
<td>- 4 or 8 contact inputs for push buttons</td>
<td>- LED indications for supply and bus status</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- DC power supply

<table>
<thead>
<tr>
<th><strong>BDD-INCON4-U</strong></th>
<th><strong>BDD-IOCP8x-U</strong></th>
<th><strong>BDD-INCON4-U</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- LED indication for armed when using bus supply</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 3-wire system with bus and supply of module through external power supply</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Compact housing
- Bus powered

<table>
<thead>
<tr>
<th><strong>BDA-INVOL-U</strong></th>
<th><strong>B4X-LS4-U / B5X-LS4-U</strong></th>
<th><strong>SHA4XWLS4 / SHE5XWLS4</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 4 individually programmable push button inputs</td>
<td>- 4 individually programmable push buttons</td>
</tr>
<tr>
<td></td>
<td>- 4 individually programmable LEDs for true response</td>
<td>- Blue and red LEDs* for wireless field power and battery level</td>
</tr>
<tr>
<td></td>
<td>- Bus powered, no external supply required</td>
<td>- Battery supplied</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Compact housing
- Bus powered

<table>
<thead>
<tr>
<th><strong>BDA-INVOL-U</strong></th>
<th><strong>B4X-LS4-U / B5X-LS4-U</strong></th>
<th><strong>SHA4XWLS4 / SHE5XWLS4</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- B4X-LS4-U: Developed to fit into wall socket and frames from Fuga, NIKO and Bticino</td>
<td>- SHA4XWLS4: Developed to fit into wall socket and frames from Fuga, NIKO and Bticino</td>
</tr>
<tr>
<td></td>
<td>- B5X-LS4-U: Developed to fit into wall socket and frames from Elko, Gira and Jung</td>
<td>- SHE5XWLS4: Developed to fit into wall socket and frames from Elko, Gira and Jung</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Open PCB with terminal connection
- Bracket for DIN-rail mounting available

<table>
<thead>
<tr>
<th><strong>BDA-INVOL-U</strong></th>
<th><strong>B4X-LS4-U / B5X-LS4-U</strong></th>
<th><strong>SHA4XWLS4 / SHE5XWLS4</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Voltage input module**
- Input voltage module for building automation
- 1 opto-isolated voltage input 90-265 VAC

**MAIN FEATURES**
- Compact housing
- Bus powered

<table>
<thead>
<tr>
<th><strong>BDA-INVOL-U</strong></th>
<th><strong>B4X-LS4-U / B5X-LS4-U</strong></th>
<th><strong>SHA4XWLS4 / SHE5XWLS4</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Light switches**
- SHA4XWLS4: Developed to fit into wall socket and frames from Fuga, NIKO and Bticino
- SHE5XWLS4: Developed to fit into wall socket and frames from Elko, Gira and Jung

**MAIN FEATURES**
- 4 individually programmable push buttons
- Blue and red LEDs* for wireless field power and battery level
- Battery supplied
- Range up to 100 m in open air

**Wireless light switches**

---

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

Our product range

<table>
<thead>
<tr>
<th>Glass touch switches</th>
<th>Glass touch dimming</th>
<th>Glass touch temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHG060WLS4 / SHG060BLS4</strong>&lt;br&gt;<strong>SHG503WLS6 / SHG503BLS6</strong>&lt;br&gt;• 4 or 6 individually programmable keys&lt;br&gt;• Black or white glass&lt;br&gt;• Backlight ON when the hand nears the glass&lt;br&gt;• Programmable buzzer when a key is pressed&lt;br&gt;• Integrated temperature sensor, range -9°C to 50°C</td>
<td><strong>SHG060BSLD / SHG060WSLD</strong>&lt;br&gt;<strong>SHG503BSLD / SHG503WSLD</strong>&lt;br&gt;• 4 dimmable outputs or on/off functions. The push buttons can be programmed to control up to 4 dimmable outputs or on/off functions. The push buttons can be programmed to control up to&lt;br&gt;• The dimming level is changed by moving the finger over the slider&lt;br&gt;• Black or white glass&lt;br&gt;• Backlight ON when the hand nears the glass&lt;br&gt;• Programmable buzzer when a key is pressed</td>
<td><strong>SHG060BSLT / SHG060WSLT</strong>&lt;br&gt;<strong>SHG503BSLT / SHG503WSLT</strong>&lt;br&gt;• It can control one temperature function managing 3 setpoints with the slider and on/off functions&lt;br&gt;• Integrated temperature sensor, range -9°C to 50°C&lt;br&gt;• White and black glass&lt;br&gt;• Backlight ON when the hand nears the glass&lt;br&gt;• Programmable buzzer when a key is pressed&lt;br&gt;• Shows current room temperature and a secondary temperature</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**<br>• Power supply: 24 VDC<br>• Mounting: 503 box, Ø60 box

<table>
<thead>
<tr>
<th>90° PIR detectors</th>
<th>90° PIR + lux meters</th>
<th>Light switches + 90° PIR + lux meter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHA4XP90L / SHE5XP90L</strong>&lt;br&gt;• Passive infrared detector (PIR)&lt;br&gt;• Detects movement and presence&lt;br&gt;• Indoor applications&lt;br&gt;• Operating angle: 90°&lt;br&gt;• Lighting measuring range: 0 to 20 K lux</td>
<td><strong>SHA4XL54P90L / SHE5XL54P90L</strong>&lt;br&gt;• 4 individually programmable push button&lt;br&gt;• Integrated 90° PIR and luxmeter sensor&lt;br&gt;• Indoor applications</td>
<td><strong>B4X-PIR90-U / B5X-PIR90-U</strong>&lt;br&gt;• Passive infrared detector (PIR)&lt;br&gt;• Detects movement and presence&lt;br&gt;• Indoor applications&lt;br&gt;• Operating angle: 90°&lt;br&gt;• Walk test: LED indication&lt;br&gt;• Programmable sensitivity</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**<br>• Bus powered<br>• Walk test: LED indication<br>• Programmable sensitivity

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

<table>
<thead>
<tr>
<th>150° PIR detectors</th>
<th>150° PIR + lux meters</th>
<th>Light switches + temperature and humidity sensor</th>
</tr>
</thead>
</table>

**SHA4XP150 / SHE5XP150**
- Passive infrared detector (PIR)
- Detects movement and presence
- Indoor and outdoor applications
- Operating angle: 150°
- Operating distance: 8 m

**SHE5XP150 / SHA4XP150**
- Integrated 150° PIR and luxmeter sensor
- Operating angle: 150°
- Operating distance: 8 m

**SHA4XP150L / SHE5XP150L**
- Passive infrared detector (PIR)
- Detects movement and presence
- Indoor and outdoor applications
- Operating angle: 150°
- Operating distance: 8 m

**SHA4XL54TH / SHE5XL54TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**BTM-T4-24**
- 4" colour display
- Easy setup of graphic pages and functions with the powerful software Wizard
- Activation of internet links through touch buttons
- Support viewing from IP cameras

**BTM-T7-24**
- 7" colour display
- Easy setup of graphic pages and functions with the powerful software Wizard
- Activation of internet links through touch buttons
- Support viewing from IP cameras

**SHA4XTEMDIS / SHE5XTEMDIS**
- Temperature controller with display
- Shows current room, outdoor and auxiliary temperature
- Turns on/off heating and cooling
- Energy Save through 3 different setpoints: comfort, activity, economy

**SHA4XTEMMDIS / SHE5XTEMMDIS**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHE5X150 / SHA4X150**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4X150 / SHE5X150**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4X150L / SHE5X150L**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHE5XLS4TH / SHA4XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%

**SHA4XLS4TH / SHE5XLS4TH**
- 4 individually programmable push button
- Integrated temperature and humidity sensor
- Temperature range: -40° to 60°C
- Humidity range: 5% to 95%
### Home Automation

#### Our product range

<table>
<thead>
<tr>
<th>90° PIR lux meters</th>
<th>90° PIR lux meters</th>
<th>360° PIR lux meter</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BSD-PIR90-U / SHSDP90L</strong></td>
<td><strong>BSP-PIR90-U / BSP-PIR90A-U SHSP90L / SHSPP90LA</strong></td>
<td><strong>SHSQP360L</strong></td>
</tr>
<tr>
<td>- Passive infrared detector (PIR)</td>
<td>- Passive infrared detector (PIR)</td>
<td>- Passive infrared detector (PIR)</td>
</tr>
<tr>
<td>- Detects movement and presence</td>
<td>- Detects movement and presence</td>
<td>- Detects movement and presence</td>
</tr>
<tr>
<td>- Indoor applications</td>
<td>- Indoor and outdoor applications</td>
<td>- Indoor applications</td>
</tr>
<tr>
<td>- Operating distance: 12 m</td>
<td>- Operating distance: 0.5 - 15 m</td>
<td>- Operating distance: ≤7.5 m</td>
</tr>
<tr>
<td>- Operating angle: 90°</td>
<td>- Operating angle: 90°</td>
<td>- Operating angle: 360°</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Bus powered
- Walk test: LED indication
- Programmable sensitivity

<table>
<thead>
<tr>
<th>Environmental sensors</th>
<th>Smoke detectors</th>
<th>Water detector</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SHSUXXXXD / SHSUXXXXL</strong></td>
<td><strong>BSG-SMO-U / BSG-SMOA-U</strong></td>
<td><strong>BSF-WAT-U</strong></td>
</tr>
<tr>
<td>- Room sensors for CO₂, temperature and humidity measurement</td>
<td>- Detection of smouldering and flaming fires with smoke development</td>
<td>- Integrated water sensor input</td>
</tr>
<tr>
<td>- Available with display, RGB LED or neutral</td>
<td>- Without radioactive sources</td>
<td>- Water resistant PCB with screw terminals</td>
</tr>
<tr>
<td>- Temperature range: -20°C to +50°C</td>
<td>- Detection of up to 60 m²</td>
<td>- External input for Felson moisture cable</td>
</tr>
<tr>
<td>- Humidity range: 0 to 100 %RH</td>
<td>- Transmission of alarms and Alive signal via bus</td>
<td>- Easily mountable with unique mounting bracket</td>
</tr>
<tr>
<td>- CO₂ range: 0 to 2000 ppm</td>
<td></td>
<td>- Constant monitoring of sensor sensitivity</td>
</tr>
</tbody>
</table>

**MAIN FEATURES**
- Easily mountable
- Bus powered
- Low current consumption

- Battery backup if the connection is interrupted
- Constant monitoring of sensor sensitivity
- Bus powered
Our product range

<table>
<thead>
<tr>
<th>Wireless window sensors</th>
<th>Programmable alarm keypad</th>
<th>Weather station</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHOWEAGPS</td>
<td>BACC-KEYPAD-DC-U</td>
<td>SHOWEAGPS</td>
</tr>
<tr>
<td>• Light, wind, temperature measurement</td>
<td>• Keypad for building access control and alarm control</td>
<td>• Light, wind, temperature measurement</td>
</tr>
<tr>
<td>• Ranges: 0 to 100K lux, 0 to 35 m/s, -40° to 80°C</td>
<td>• Indoor or outdoor applications</td>
<td>• Ranges: 0 to 100K lux, 0 to 35 m/s, -40° to 80°C</td>
</tr>
<tr>
<td>• Rain sensor included</td>
<td>• 28 user-programmable codes</td>
<td>• Rain sensor included</td>
</tr>
<tr>
<td>• Dimensions: sensor: 60 x 30 x 15.5, magnet: 32 x 10.2 x 11.5</td>
<td>• Programmable LED indication</td>
<td>• Main features</td>
</tr>
<tr>
<td>• Reed sensor</td>
<td>• Buzzer output</td>
<td>• Integrated GPS receiver</td>
</tr>
<tr>
<td>• Additional voltage free input</td>
<td></td>
<td>• Modbus RS485 protocol</td>
</tr>
<tr>
<td>• 1 red LED/1 blue LED for battery level indication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Range up to 100 m in open air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIN FEATURES</td>
<td>MAIN FEATURES</td>
<td>MAIN FEATURES</td>
</tr>
<tr>
<td>• Wall mounting, crew and double side tape</td>
<td>• DC power supply</td>
<td>• Wall mounting, crew and double side tape</td>
</tr>
<tr>
<td>• Battery supplied</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anemometer</th>
<th>Lux meter for outdoor installation</th>
<th>Outdoor temperature sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSN-ANE-U</td>
<td>BSH-LUX-U</td>
<td>BSI-TEMANAX-U</td>
</tr>
<tr>
<td>• Measuring range: 2 m/s to 25 m/s</td>
<td>• Lighting measuring range: 0 to 20K lux</td>
<td>• Temperature range: -40° to +60°C</td>
</tr>
<tr>
<td>• Built-in alarm output with programmable threshold</td>
<td>• For indoor and outdoor installation</td>
<td>• BSI-TEMANA-U is delivered with a M12 plug</td>
</tr>
<tr>
<td></td>
<td>• Working temperature: -30° to +60°C</td>
<td>• BSI-TEMANAB-U is delivered with 2 m cable</td>
</tr>
<tr>
<td>MAIN FEATURES</td>
<td>MAIN FEATURES</td>
<td>MAIN FEATURES</td>
</tr>
<tr>
<td>• Easily mountable</td>
<td>• Easily mountable</td>
<td>• Easily mountable</td>
</tr>
<tr>
<td>• Bus powered</td>
<td>• Bus powered</td>
<td>• Bus powered</td>
</tr>
</tbody>
</table>

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