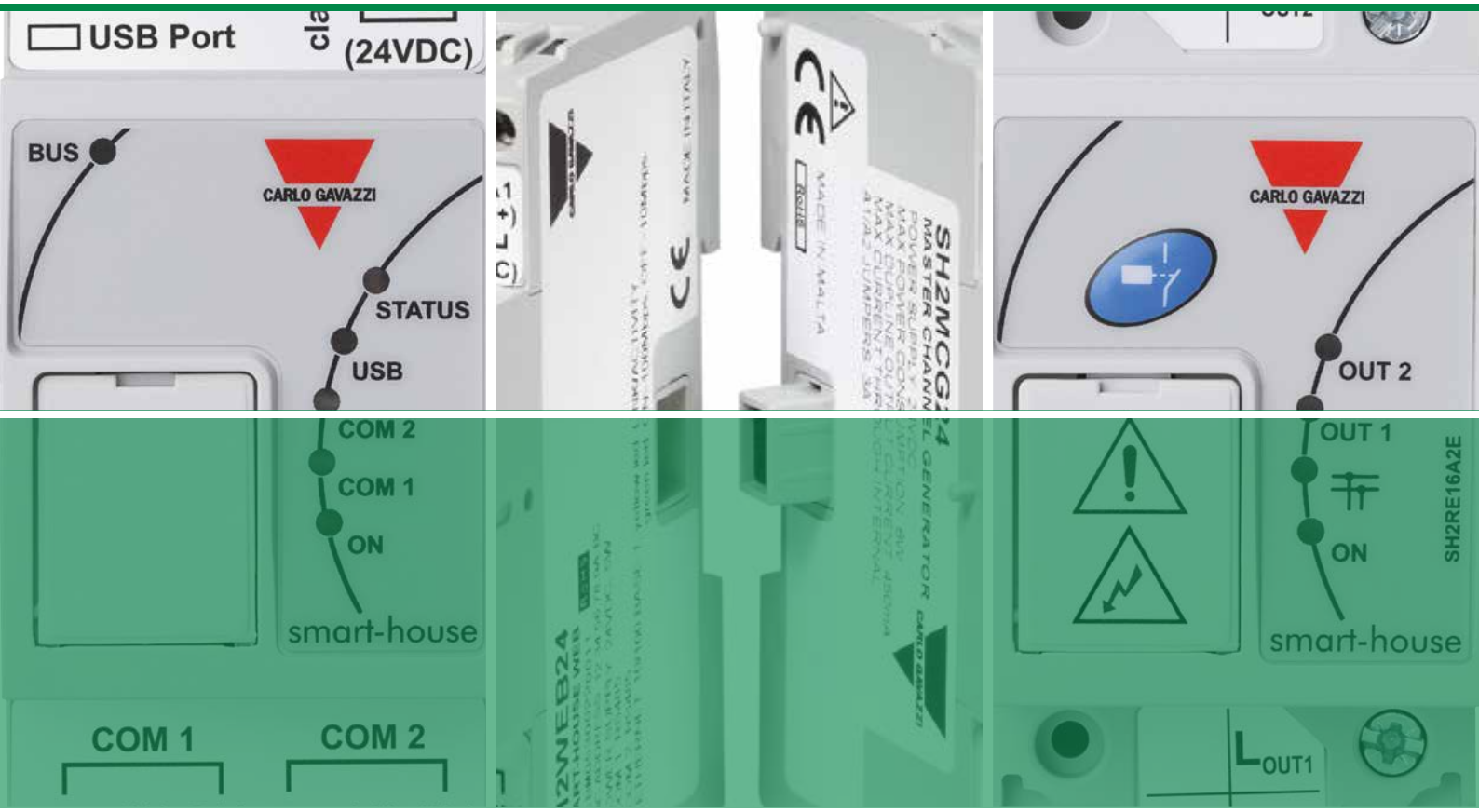
CARLO GAVAZZI
Automation Components

CARLO GAVAZZI



Building automation system

Controls

Building automation system

Building automation today is a lot more than lighting control, it is a way to save energy and to improve wellbeing and people efficiency. Like a person, an automated building/house can change over time, following evolving needs, easily adapting itself to new solutions. The automation in buildings means energy saving, reduced CO_2 emissions and improvement of the environment in compliance with the national and international guideline.
The new building automation system by Carlo Gavazzi offers this new way of living to its customers: let's discover all the advantages and applications!

A dynamic and evolving system

Carlo Gavazzi delivers a new way of designing a house or a building, thanks to its flexibility and modularity.
It is based on a patented digital bus, the two-wire Dupline® bus, very powerful in transmitting all the information needed in building automation. Thanks to the bus concept, the system can be expanded at any time without important structural changes in the installation and with excellent management of the costs. Furthermore, the functions can be changed and/or updated very easily by means of a software at any time and from anywhere, also remotely. Thanks to this, the system is always alive, dynamic, and easily adapted to the evolving requirements of the home owner and to the fast-progressing world of high technology. Carlo Gavazzi's system delivers complete solutions for home and building automation, including lighting scenarios to select the best ambience, shutter control to regulate perfect light and shade, temperature management to combine optimum comfort with optimum efficiency, intrusion, flooding and smoke monitoring to protect from any burglary or damage to the house, a scheduler to program all events and basic functions. All this creates very special automation. The system also includes energy monitoring, logging power, water and gas consumption and whatever information is present on the bus (temperatures, humidity, light level, ….). All this data is available on graphs, just by using a smart device or a PC, thanks to the embedded webserver. Moreover, the system is an open platform designed for easy and fast integration with products from other companies, since we use protocols based on TCP/IP, for which we deliver the complete documentation.

Fast commissioning without any addressing

One of the most innovative features is that no addressing of modules is needed: the installer just has to mount all the modules, launch a network scan and the system will find and automatically recognise the connected devices without the need to go around the whole installation making association or addressing. This means time and cost savings and an error free configuration process.

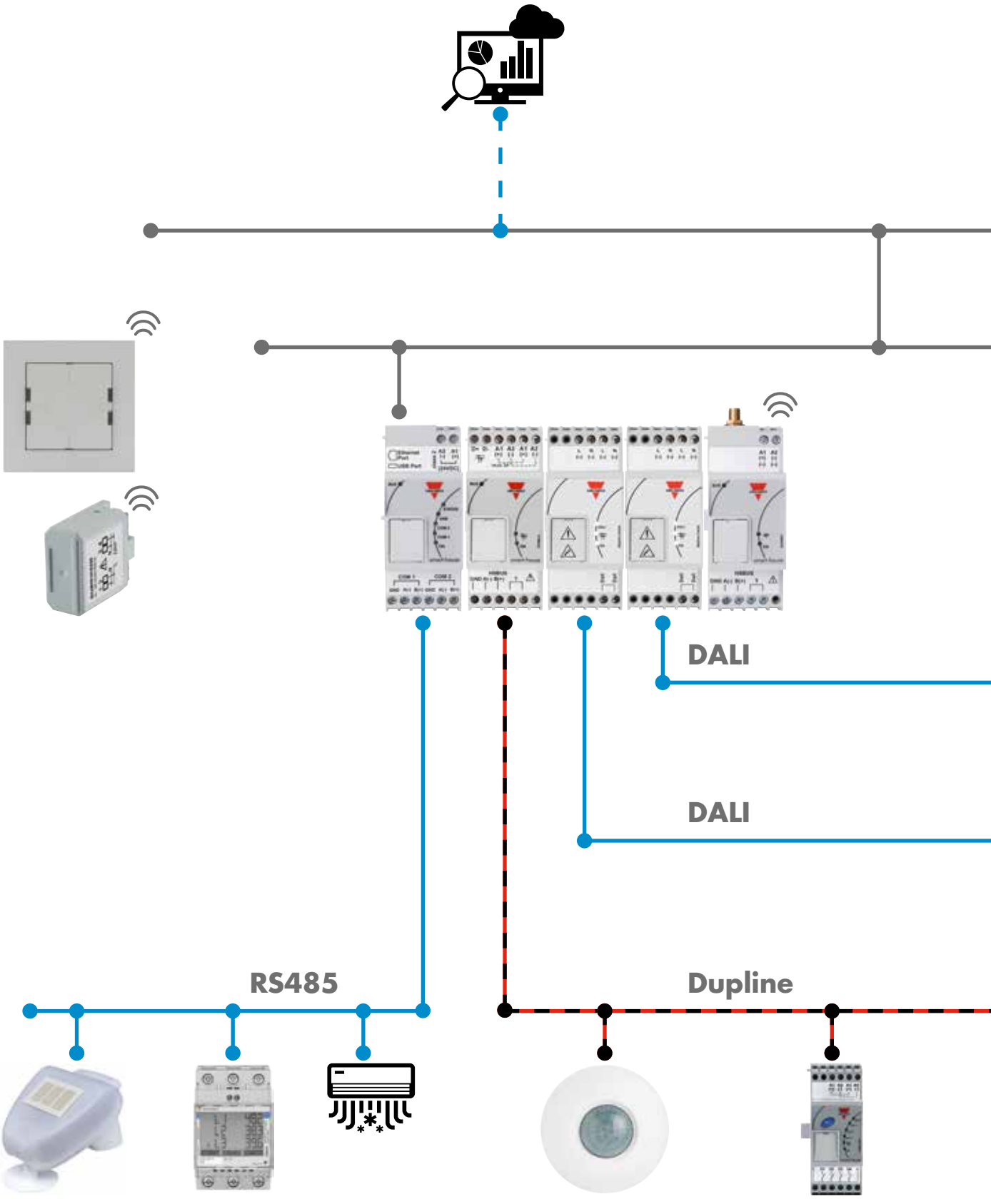
Diagnostic function for easier troubleshooting

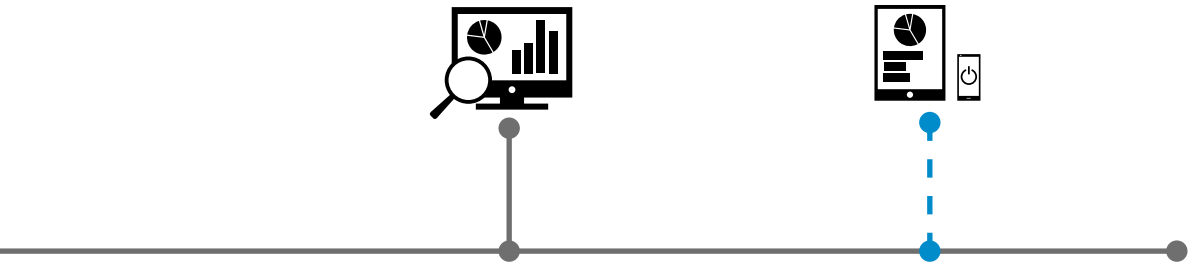
If any trouble should occur, the system provides powerful diagnostic functions in order to make the fault finding much easier: the bus is always monitored, giving information about shortcircuits, bus voltage and bus load, noise level and quality of the bus signals. The presence of the programmed devices is always monitored in order to give an immediate message if one is faulty. All this information is logged in a file so that the installer can check at any time what is happening.

State of the art software to guide users

The configuration of the system is easily carried out with the free Sx tool that is downloadable from the Carlo Gavazzi website. The software has been developed using a state of the art concept in order to have a user friendly interface that guides the user in a fast and error free system configuration. At the same time, thanks to many basic functions, the most skilled user can also create customised applications. Furthermore, the Sx tool has many debug features to make testing easier .

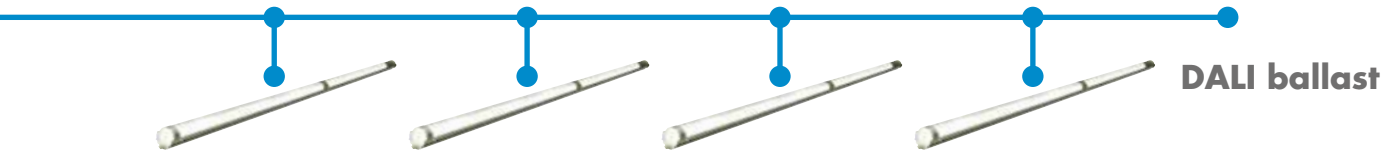
Diagram



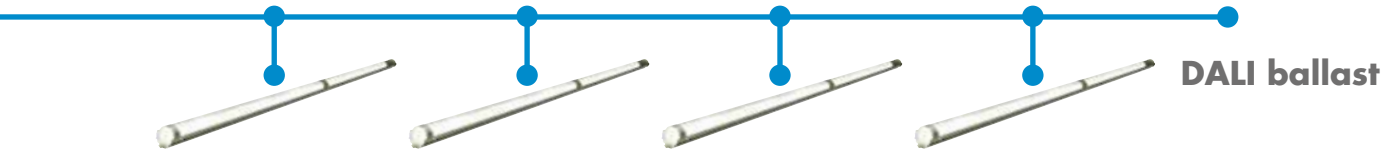


Ethernet/BACnet/Modbus TCP/IP

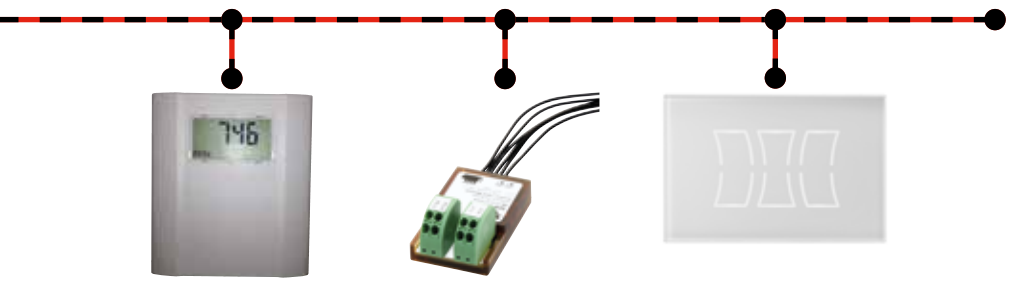
DDC/BMS



DALI ballast



DALI ballast



Brain and communication

SH2WEB24/SB2WEB24/SA2WEB24: the controller

Carlo Gavazzi's system is based on a central CPU, the Sx2WEB24, a Linux based embedded PC that manages all the smart functions. It is programmed by means of powerful software, the Sx tool. The Sx2WEB24 has the Ethernet communication capability to be remotely controlled and monitored by smart-devices/PCs; it is also a datalogger that can record any value/event coming from the many buses it can connect to (Wireless and Dupline® buses, two RS485 ports, Ethernet). This master unit is also provided with an sd-card and USB port to upload/download data and system configurations

Fast commissioning

The innovative concept of the local bus makes commissioning very easy, fast and error free: the installer only has to plug the DIN modules next to one another without wiring any bus cable in the cabinet, saving time and drastically reducing installation costs.
The wiring of the decentralised modules such as light switches, movement sensors, etc is also made very straightforward thanks to the screwless and detachable connectors: wires only need to be plugged in and everything is done!

The heart

The bus generators

If the Sx2WEB24 is the brain of the system, the two bus generators are the pulsating heart that makes all the information flow. They are connected to the Sx2WEB24 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 only have to be plugged together without any wiring, and 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 Sx2WEB24.

SH2MCG24: the wired smart Dupline® bus generator

The SH2MCG24 is the smart Dupline® bus generator that enables the Dupline® bus to communicate with the local bus and with the terminals at the top. Thanks to this the DIN-rail slave modules (dimmers, relays, rollerblind modules, etc...) can just be plugged into the SH2MCG24, without the need for any wiring.

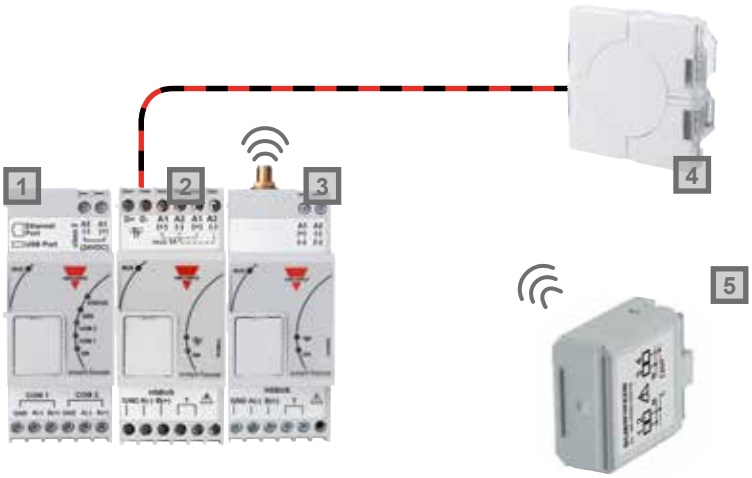
The decentralised modules, such as light switches, PIR sensors, temperature display, ...are connected to the SH2MCG24 by the two wires coming from the Dupline® terminals at the top. Up to 250 modules can be connected to one SH2MCG24.

SH2WBU230N: the wireless wiDup bus generator

The system also provides a solution for when it is not possible to use wires. The SH2WBU230N 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 SH2WBU230N. The open space operating distance is 700m.

Wired and wireless buses work together

1 SH2WEB24
2 SH2MCG24
3 SH2WBU230N
4 SHA4XLS4TH
5 SHJWRE10AE230
Dupline® bus.



Functionalities

DALI lighting control

The DALI control system by Carlo Gavazzi not only provides cutting edge lighting control for commercial and residential lighting requirements but also within the same single system structure, a comprehensive shading and temperature control. The clear driving force today in lighting control is to make the best use of the energy consumed by the building under design. A key area for potential energy savings, and therefore a focus for legislators, is lighting provision. It may be as simple as proper timed control, the use of sensors and dimming technology for daylight harvesting or precise control for individual task lighting. Furthermore, alterations or additions in DALI systems are easy to achieve as the installation can be reused over and over, saving you money and downtime.

1 SHA4XLS4P90L
SHE5XLS4P90L
Light switch with integrated 90° PIR sensor and luxmeter

2 SHJWD200WE230
Wirless dimmer with energy reading

3 SH2RE16A4
4-relay module

4 Junction box

—: Dupline® BUS

Temperature and CO_2 control

The temperature control function has been developed to suit the needs of both small homes and big buildings thanks to the management of independent zones. The SB2WEB controller is empowered with the BACnet protocol so that it provides the link to upper level BMS and DDC client via BACnet/IP. All the functions and I/Os are controlled and managed via BACnet for example adjusting operating parameters or reading environmental data.
Air quality is another important aspect to consider in building automation: it is recommended that the content of CO_2 should be below 1,000 ppm in an indoor environment. Some of the benefits with a low CO_2 level are better concentration, wellbeing, higher learning capability and improved patience recovery.
Carlo Gavazzi delivers specific CO_2 sensors and ventilation control to assure occupant health.

1 SHSUCOTHD
Temperature, humidity and CO_2 sensor

2 SHPOUTV224
0-10V analogue output module

3 BDA-RE13A-U
Relay output module

4 Junction box

—: Dupline® BUS

Functionalities

Tunable white stimulation

"Human centric lighting" is a new term what emphasizes light as a main factor influencing human behaviour in his life space. It simultaneously takes into account our requirements for good vision as well as our emotional and biological needs.
Typical use cases of tunable white lamps in various segments are:

Education - Decreased fatigue and shortened wake-up times, extended and deepened concentration periods.
Office - Increased employee motivation and commitment, individualized maximization of concentration and energy.
Wholesale and retail - Daylight-compatible product presentations, extended daytime in shopping malls. Inviting a customer to buy goods and suggesting freshness and positive mood.
Hospital - Enhanced drug efficiency, e.g., of antidepressants, reduced therapy times and capacity requirements.
Carlo Gavazzi solution helps you tailor the colour and feel of a space to user needs and desires.

1 SB2DALIT8230
DALI master

2 SHSQP360L
Movement sensor with integrated luxmeter

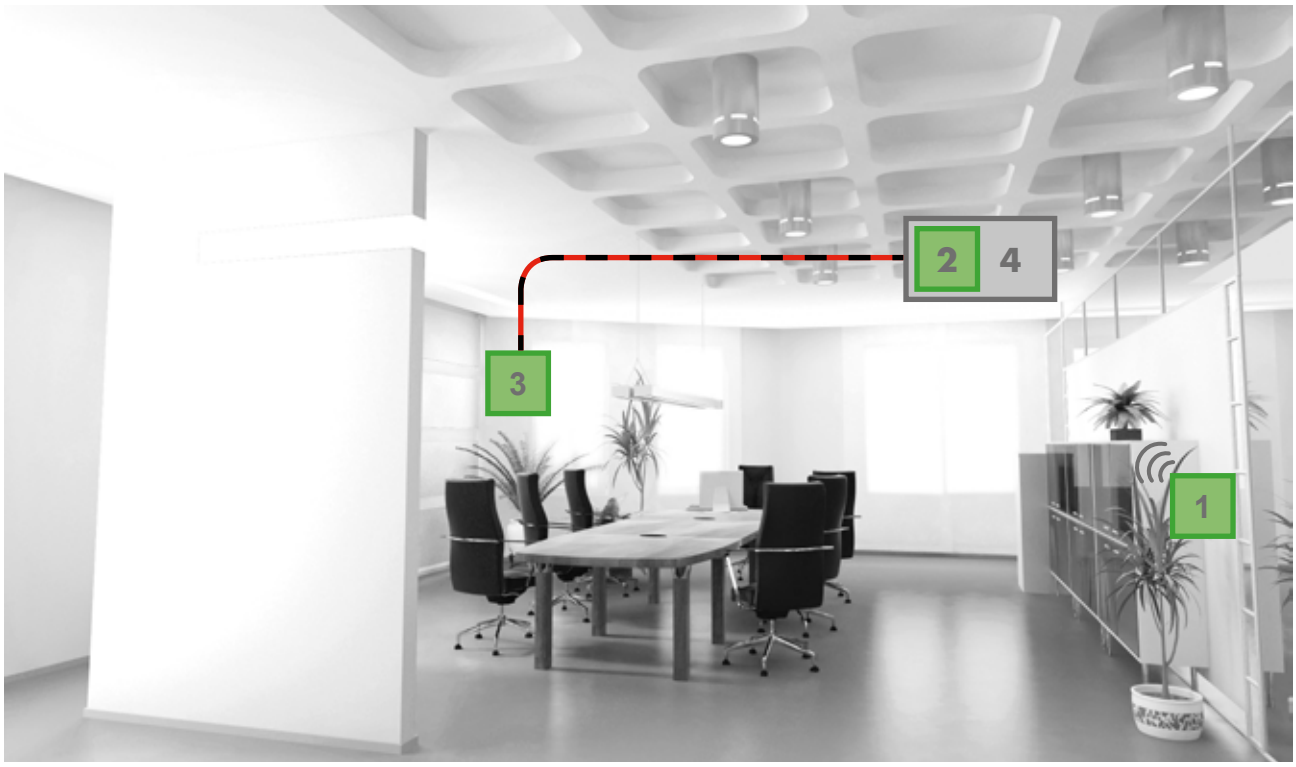
3 SHE5XWLS4BFT
Wireless light switch and temperature sensor

4 Junction box

▬: Dupline® BUS

Shade control

Carlo Gavazzi functions for automated blinds can help control lighting, temperature and privacy, as well as enhancing comfort and security. The user can move these manually, using the same kind of switches as are used for light, or have them automatically moved according to predefined light levels, rain and wind presence, temperatures and the scheduler.
Carlo Gavazzi system for building automation also manages curtains with tilting flaps in a very efficient way.
The blinds and windows can be controlled individually or by group: this choice can be defined once the installation is finished and at any time later.
Energy saving is achieved also by means of a proper use of blinds and curtains.



1 SHE5XWLS4BFT
Wireless light switch and temperature sensor

2 SH2RODC224
Roller blind module

3 SHSPP90L
PIR sensor with integrated luxmeter

4 Junction box

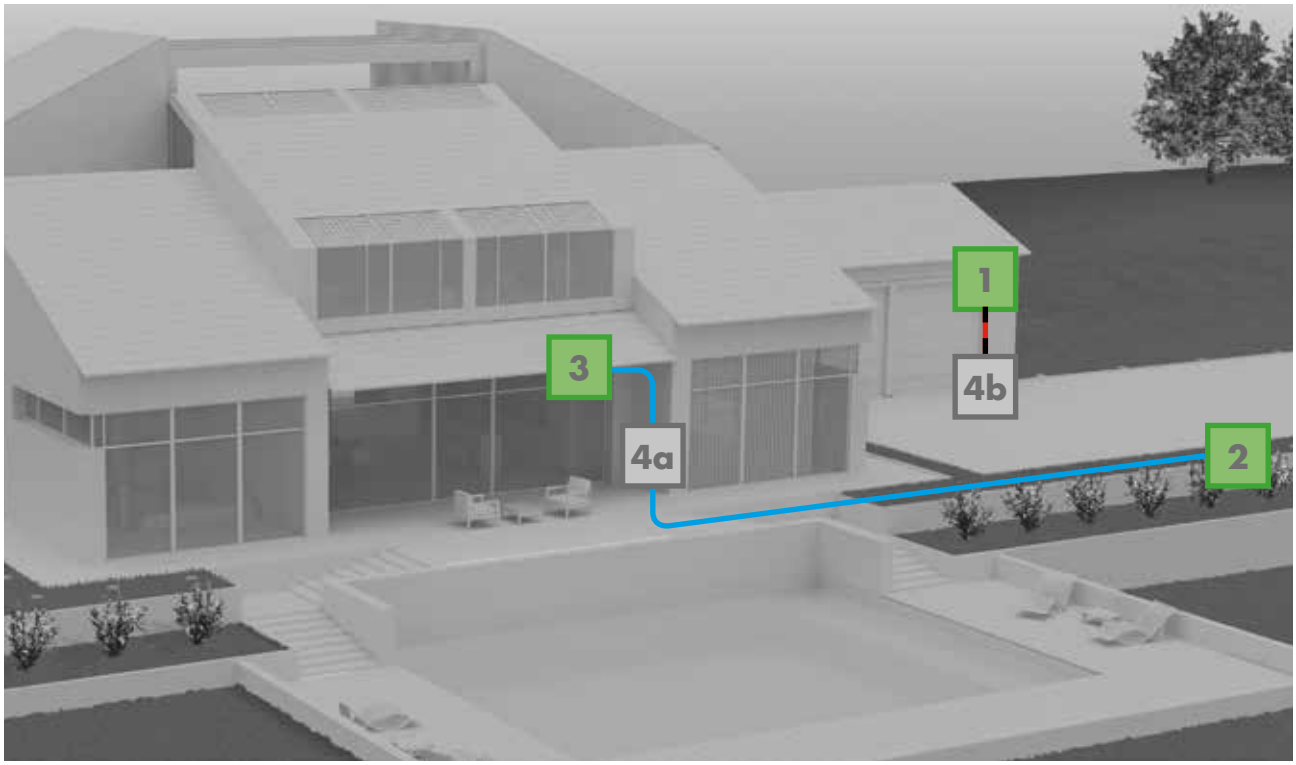
—: Dupline® BUS

Functionalities

Sequences: one click to do many things

Sequences is a powerful tool offered by the system: the user can put together the functions already created to activate/deactivate them with just one click. For example, when the home owner activates the "Good bye" sequence when exiting his house, the intruder alarm is activated, all the lights are switched off, all the blinds go down and the temperatures are set to the economy level. In the same way, when he comes back home, by activating the "Welcome" sequence all the required lights are switched on, the blinds go up, soft music or the television can be turned on, and so on … there are no limits to the possibilities offered by the smart-house system.

Waking up in the morning can be programmed to be very gentle in a smart-house: the blinds go up to a predefined level very slowly so that the light intensity is not too strong, soft music starts and the temperature is programmed to reach the comfort level required.



1 SHOWEAGPS
Weather station

2 SH2RE16A4
4-relay module

3 SH2D10V424
Dimmer module

4 a: Cabinet
b: Junction box

▬▬: Dupline® BUS

▬▬: Load control

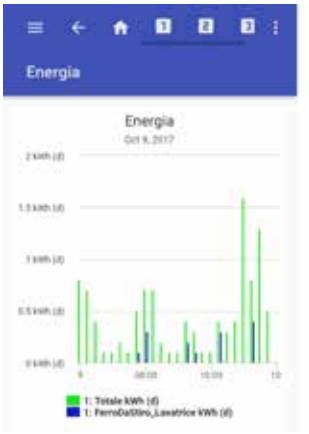
Energy monitoring and data logging

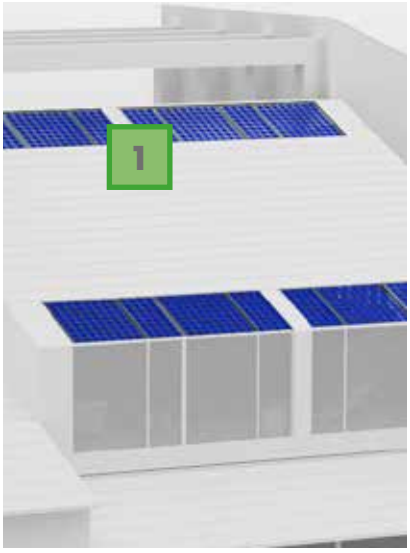
The system reads and logs the electrical values and displays them in graphics, comparing them with the previous day, or presents them in downloadable excel and csv files.
The reading can be done using:

- Any Modbus device (e.g. meters, analysers, fan coils, heat pumps,...).
- The Dupline® output modules with energy reading capability (dimmer module, DIN-rail relay module and wireless relay output module): the information is sent via the Dupline® bus.
- The Dupline® DIN-rail pulse counter connected to an energy meter: the information is sent via the Dupline® bus.

At the same time, the installer can create simple logic to switch the loads off automatically if the consumed power exceeds the pre-set threshold, or they can be activated only according to a defined time table at cheaper electricity tariffs.
In the same user friendly format, the user can also view the consumption of gas and water.

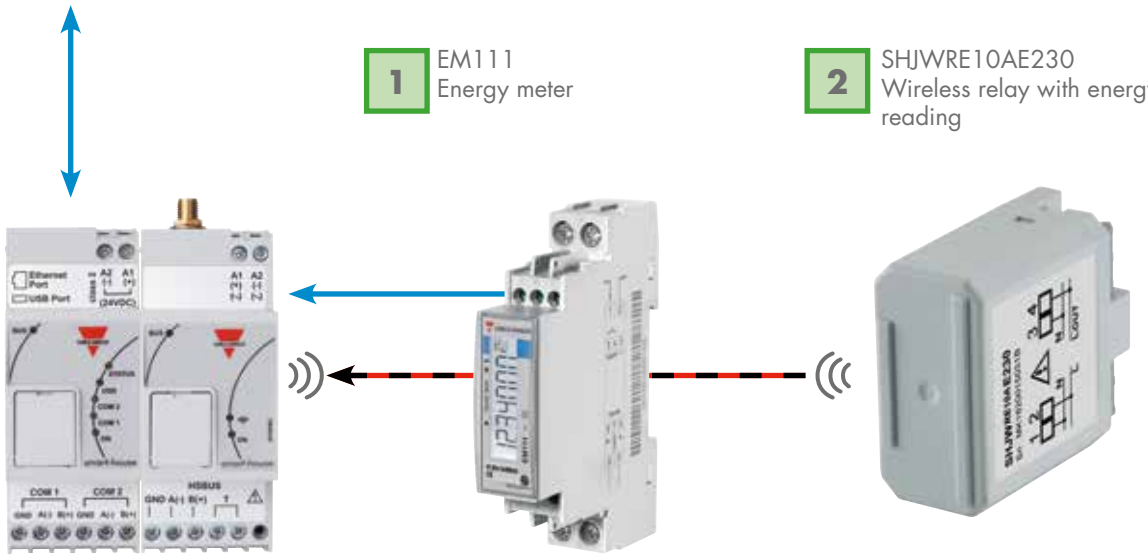
As with all the electrical values, the system can log any analogue value and present it in graphs.
The graphs and instant values can be seen by using smart-devices such as mobile phones, tablets, PCs.





1 EM111
Energy meter

2 SHJWRE10AE230
Wireless relay with energy reading



SH2WEB24
SH2WBU230N

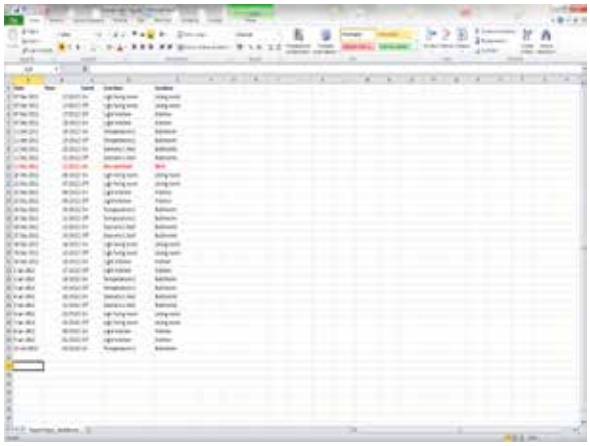
: RS485

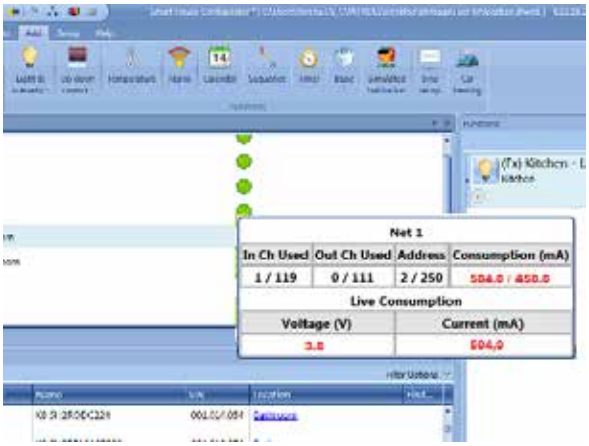
: Dupline® BUS or wireless wiDup

Software

Diagnostic function

The Carlo Gavazzi's system provides information about its working status and makes it available by using the Sx tool and the webserver.
During commissioning, the installer is always aware of the working status of the connected buses bus, since the bus voltage, bus load and short-circuit are monitored, as well as the quality of the signal: thanks to this, if any fault should occur, the installer will be informed without going all around the installation to look for it, thus saving time and money.
At the same time, each module is monitored to check if it is alive, working well and without any alarm/warning message such as over current, over voltage or over temperature, and the result is always available via smart-devices, so that the home owner can also be alerted in advance if any fault is going to occur.
The system also advises if a lamp or, in general a load , is broken or not working anymore, reminding the user to change or repair it.
All the diagnostic events are logged in a file that can be accessed locally or remotely, providing the installer with a way to look into the problem even if it occurred in the past.





SmartHub: the touch display

In the living room or at the entrance, the SmartHub display is the ideal solution to control a smart-house with a finger touch. It is connected to the Sx2WEB24 master unit via Ethernet and it is configured by the easy-to-use Wizard software, which automatically reads the Modbus TCP/IP variables of the master unit and assists the installer in creating the user interface with a comprehensive object library and templates. All the functions such as lights, scenario, light and shade, alarms, temperatures, …can be controlled by the SmartHub. It can also be linked to external monitoring systems, such as surveillance IP cameras, to monitor parts of a building directly from the touch panel. Furthermore, audio/video systems with Modbus TCP/IP capability can be connected to control music and entertainment.

Sx tool: the configuration software

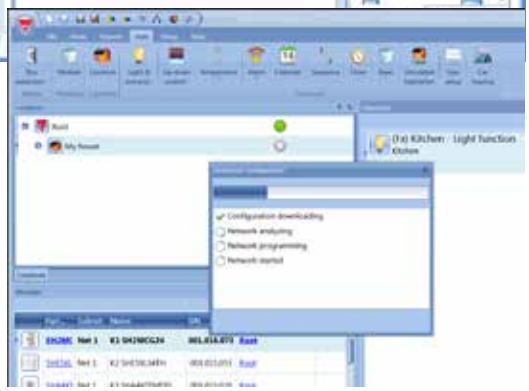
The master unit is programmed by means of the configuration software Sx tool, downloadable free from the Carlo Gavazzi website. The Sx software has been developed to make commissioning fast, easy and error free: the wizard tool guides the user step by step in the creation of predefined functions. As soon as the software is connected to a master unit, it scans the network and finds all the connected modules. Thanks to this feature, the installer doesn't have to worry about any addressing of the modules, since it is done automatically, saving a lot of time and drastically reducing the numbers of errors. In a very intuitive way, the user can create a map of the installation where he will place the required modules and create all the automation, either with predefined functions or by using special logic with the basic functions.

Create a "tree" map of the installation. **1**

Add all the installed modules with an automatic network scan. **2**

Create your functions in a very simple way by means of the wizard tool. **3**

Download the configuration locally and remotely into the master unit Sx2WEB24. **4**



Our product range

Switches

		Colour/ Dimensions (mm)	Mounting	LED	Power supply	Other functions
	**B4X-LS4-U**	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	
	B5X-LS4-U	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	
	SHA4XLS4TH	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	With temperature and humidity sensor
	SHE5XLS4TH	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	With temperature and humidity sensor

Switches with integrated motion detector and luxmeter

		Colour/ Dimensions (mm)	Mounting	LED	Power supply	Main features
	**SHA4XLS4P90L**	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	4 push buttons, 90° PIR and luxmeter
	SHE5XLS4P90L	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	4 push buttons, 90° PIR and luxmeter

Temperature displays

		Colour/ Dimensions (mm)	Mounting	LED	Power supply	Main features
	**SHA4XTEMDIS**	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	Measuring range: -10°C to +50°C, 3 setpoints
	SHE5XTEMDIS	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	Measuring range: -10°C to +50°C, 3 setpoints

Outdoor temperature sensor

		Colour/ Dimensions (mm)	Mounting	Connection	Power supply	Measuring range
	**BSI-TEMANx-U**	White/ 67x35x15	Wall mounting	Cable or plug	By bus	-40°C to +50°C

Movement/Presence detectors

		Colour/ Dimensions (mm)	Mounting	LED	Power supply	Other functions
	**B4X-PIR90-U**	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	Operating distance: 8m Angle: 90°
	**B5X-PIR90-U**	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	Operating distance: 8m Angle: 90°
	**BSD-PIR90-U**	White/ 104x55x57	Wall mounting	Red	By bus	Operating distance: 10m Angle: 90°
	**BSB-PIR90-U**	White/ Ø 76x25	Ceiling mounting	Blue	By bus	Operating distance: 6m Angle: 90°
	**BSP-PIR90-U**	White/ 67x52x34	Wall mounting	Blue	By bus	Operating distance: 15m Angle: 90°
	**SHA4XP150**	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	Operating distance: 8m Angle: 150°
	**SHE5XP150**	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	Operating distance: 8m Angle: 150°

Movement/Presence detectors with luxmeter

		Colour/ Dimensions (mm)	Mounting	LED	Power supply	Other functions
	**SHA4XP90L**	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	Operating distance: 8m Angle: 90°
	**SHE5XP90L**	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	Operating distance: 8m Angle: 90°
	**SHSDP90L**	White/ 104x55x57	Wall mounting	Red	By bus	Operating distance: 10m Angle: 90°
	**SHSBP90L**	White/ Ø 76x25	Ceiling mounting	Blue	By bus	Operating distance: 6m Angle: 90°
	**SHSPP90L**	White/ 67x52x34	Wall mounting	Blue	By bus	Operating distance: 15m Angle: 90°
	**SHSQP360L**	White/ Ø 90x40	Ceiling mounting	White and blue	By bus	Operating distance: 7m Angle: 360°
	**SHA4XP150L**	Black, white/ 44x44	Wall box Bticino, Niko, Fuga	White and blue	By bus	Operating distance: 8m Angle: 150°
	**SHE5XP150L**	Black, white/ 55x55	Wall box Elko, Gira, Jung	White and blue	By bus	Operating distance: 8m Angle: 150°

Our product range

Luxmeter for indoor and outdoor installation

		Colour/ Dimensions (mm)	Mounting	Connection	Power supply	Measuring range
	**BSH-LUX-U**	White/ 55x53x36	Wall mounting	Cable	By bus	Measuring range: 0 to 20Klux Operating temperature: -30° to 60°C

Light switch interfaces

		Dimension (mm)	Inputs number and type	Outputs number and type	Ouput voltage	Power supply
	**BDB-INCON4-U**	28x28x10	4, voltage free			By bus
	**BDB-INCON8-U**	28x28x10	8, voltage free			By bus
	**BDB-IOCP8-U**	28x28x10	4, voltage free	4, PNP	3.3 V	By bus
	**BDB-IOCP8A-U**	28x28x10	4, voltage free	4, PNP	8.0 V	By bus

Digital input modules

		Dimension (mm)	Inputs number	Input type	Power supply
	**BDD-INCON4-U**	107x50x110	4	Voltage free or NPN	By bus

Voltage input modules

		Dimension (mm)	Inputs number	Input type	Power supply
	**BDA-INVOL-U**	28x28x10	1	Opto-isolated voltage input 90-265 VAC	By bus

Anemometer

		Dimension (mm)	Type	Mounting	Power supply	Main features
	**BSN-ANE-U**	183x137x145	Cup anenometer	Wall mounting	By bus	Measuring range: 2 m/s to 25m/s Heating system

Weather station

		Dimension (mm)	Measurements	Power supply	Main features
	**SHOWEAGPS**	96x77x118	Light, wind, temperature, GPS receiver	10 to 40 Vdc, 12 to 28 Vac	Operating temperature: -30° C to 50°C Communication: Modbus RTU

Water detector

		Dimension (mm)	Colour	Mounting	Power supply	Main features
	**BSF-WAT-U**	70x39x15.5	White	Wall mounting	By bus	Input for Felson probe, IP67

Smoke detector

		Dimension (mm)	Colour	Mounting	LED	Power supply	Main features
	**BSG-SMO-U**	Ø 100x54	White	Ceiling mounting	1, Red	By bus	Detection area: 60 m^2 Battery back-up (9Vdc battery)
	BSG-SMOA-U	Ø 100x54	White	Ceiling mounting	1, Red	By bus	Detection area: 60 m^2

Programmable keypad

		Dimension (mm)	Mounting	LED	Power supply	Main features
	**BACC-KEYPAD-DC-U**	130x50x8	Wall box indoor and outdoor	3, programmable	12 Vdc	28 user-programmable codes Buzzer output

Environmental sensors

		Mounting	Power supply	Main features	Indication
	SHSUCOT	Wall mounting, 80x90x26 mm	By bus	CO_2 and temperature sensor	
	**SHSUCOTD**	Wall mounting, 80x90x26 mm	By bus	CO_2 and temperature sensor	Display
	**SHSUCOTL**	Wall mounting, 80x90x26 mm	By bus	CO_2 and temperature sensor	RGB LEDs
	SHSUCOTH	Wall mounting, 80x90x26 mm	By bus	CO_2, temperature and humidity sensor	
	**SHSUCOTHD**	Wall mounting, 80x90x26 mm	By bus	CO_2, temperature and humidity sensor	Display
	**SHSUCOTHL**	Wall mounting, 80x90x26 mm	By bus	CO_2, temperature and humidity sensor	RGB LEDs
	SHSUT	Wall mounting, 80x90x26 mm	By bus	Temperature sensor	
	**SHSUTD**	Wall mounting, 80x90x26 mm	By bus	Temperature sensor	Display
	SHSUTH	Wall mounting, 80x90x26 mm	By bus	Temperature and humidity sensor	
	**SHSUTHD**	Wall mounting, 80x90x26 mm	By bus	Temperature and humidity sensor	Display

Our product range

Analogue input modules

		Dimension (mm)	Inputs number and type	Power supply
	**SHPINV324**	50x30x18	3, 0 to 10 V	24 Vdc
	**SHPINV2T1P124**	50x30x18	2, 0 to 10V; 1, thermistor 10K3; 1, potentiometer 1-11Ω	24 Vdc
	**SHPINT1P1**	50x30x18	1, thermistor 10K3; 1, potentiometer 1-11Ω	By bus
	**SHPINNI2**	50x30x18	2, configurable pt1000/ni1000	By bus
	**SHPINA224**	50x30x18	2, 0-20mA/ 4-20mA	24 Vdc

Analogue output modules

		Dimension (mm)	Outputs number and type	Power supply
	**SHPOUTV224**	50x30x18	2, 0 to 10 Vdc	24 Vdc

Dupline® transparent module

		Mounting	Main features
	**SH1DUPFT**	DIN rail (1 module)	Transparent Dupline® module

Energy meter

		Mounting	Inputs number	Input type	Power supply	Main features
	**SH2EM16A230**	DIN rail (2 modules)	1	Monophase	230 Vac	Load: 16 A, 230 Vac

Dimmer modules

		Mounting	Outputs number	Dimming type	Power supply	Main features
	**SH2D500WE230**	DIN rail (2 modules)	1	230 V dimmable bulbs, LEDs	230 Vac	Power dimmer up to 500W, energy reading, local bus
	**SH2D500W1230**	DIN rail (2 modules)	1	230 V dimmable bulbs, LEDs	230 Vac	Power dimmer up to 500W, local bus
	**SH2D10V424**	DIN rail (2 modules)	4	1 to 10V dimmable ballast, LEDs	24 Vdc ±20%	Four independent outputs, local bus

Ouput modules

		Mounting	Outputs number	Output type	Power supply	Main features
	**BDA-RE13A-U**	Decentral	1	Bistable relay	By bus	Load: 16 A, 230 Vac
	**SH2RE16A2E230**	DIN rail (2 modules)	2	Bistable relay	230 Vac	Load: 16 A, 230 Vac x 2, with energy reading, local bus
	**SH2RE16A4**	DIN rail (2 modules)	4	Bistable relay	By bus	Load: 16 A, 230 Vac x 4, local bus
	**SH2RE1A424**	DIN rail (2 modules)	4	NO, voltage free contact	24 Vdc ±20%	Load: 5 A, NO x 4, local bus
	**SH2SSTRI424**	DIN rail (2 modules)	4	Solid state relay	24 Vdc ±20%	Load: 10 W x 4, local bus

Rollerblind modules

		Mounting	Outputs number	Motor type	Power supply	Main features
	**SHDRODC230**	Decentral	1	AC	230 Vac	Up/down control, tilting, local bus
	**SH2ROAC224**	DIN rail (2 modules)	2	AC	24 Vdc ±20%	Up/down control, tilting, local bus
	**SH2RODC224**	DIN rail (2 modules)	2	DC	24 Vdc ±20%	Up/down control, tilting, local bus

Digital input module/Pulse counter

		Mounting	Inputs number	Type	Power supply	Main features
	**SH2INDI424**	DIN rail (2 modules)	4	NPN, PNP, voltage free, pulse counter	24 Vdc ±20%	Configurable inputs, local bus
	**SHPINCNTS04**	Decentral	4	NPN, PNP, voltage free, pulse counter	By bus	Configurable inputs, S0 class B inputs
	**SHPINCNT4**	Decentral	4	NPN, PNP, voltage free, pulse counter	By bus	Configurable inputs

Our product range

Wireless modules, transmission based on IEEE 802.15.4, at 2.4 GHz

		Module type	Power supply	Main features
	**SHA4XWLS4**	Black/White light switch	Battery	44x44; 4 push buttons; LED indication; wall box Bticino, Niko and Fuga
	**SHE5XWLS4**	Black/White light switch	Battery	55x55; 4 push buttons; LED indication; wall box Elko, Gira and Jung
	**SHE5XWLS4BF**	Black flat light switch	Battery	55x55; 4 push buttons; LED indication; wall box Elko and Gira
	SHE5XWLS4BFT	Black flat light switch and temperature sensor	Battery	55x55; 4 push buttons; LED indication; wall box Elko and Gira
	**SHE5XWLS4WF**	White flat light switch	Battery	55x55; 4 push buttons; LED indication; wall box Elko and Gira
	SHE5XWLS4WFT	White flat light switch and temperature sensor	Battery	55x55; 4 push buttons; LED indication; wall box Elko and Gira
	**SHJWD200WEWLS230**	White dimmer, light switch and energy meter	230 Vac	Dimmer with integrated energy meter and 2 white pushbuttons, for Bticino frame
	**SHJWD200WEBLS230**	Black dimmer, light switch and energy meter	230 Vac	Dimmer with integrated energy meter and 2 black pushbuttons, for Bticino frame
	**SHJWD200WE115**	Dimmer and energy meter	115 Vac	Dimmer with integrated energy meter to be mounted into eurobox
	SHJWD200WE230	Dimmer and energy meter	230 Vac	Dimmer with integrated energy meter to be mounted into eurobox
	**SHJWEM16A115**	Energy meter	115 Vac	Energy meter to be mounted into eurobox
	SHJWEM16A230	Energy meter	230 Vac	Energy meter to be mounted into eurobox
	**SHJWRE10AEWLS230**	White relay, light switch and energy meter	230 Vac	Relay with integrated energy meter and 2 white pushbuttons, for Bticino frame
	**SHJWRE10AEBLS230**	Black relay, light switch and energy meter	230 Vac	Relay with integrated energy meter and 2 black pushbuttons, for Bticino frame
	**SHJWRE10AE115**	Relay and energy meter	115 Vac	Relay with integrated energy meter to be mounted into eurobox
	SHJWRE10AE230	Relay and energy meter	230 Vac	Relay with integrated energy meter to be mounted into eurobox
	**SHDWWISEN**	Window sensor	Battery	Door/window opening detected through sensor's body and a magnet separation
	SHDWWISENIN1	Window sensor	Battery	Door/window opening detected through sensor's body and a magnet separation with addition voltage free input

DALI

		Mounting	Power supply	Main features
	**SB2DALIT8230**	DIN rail (2 modules)	230 Vac	DALI master and power supply to control up to 64 ballasts

Smart dupline® repeater

		Mounting	Power supply	Main features
	**SB2REP230**	DIN rail (2 modules)	230 Vac	Smart Dupline® signal repeater that regenerates Dupline® signal and boosts power to extend the network lenght

Bus generators

		Mounting	Power supply	Main features
	**SH2MCG24**	DIN rail (2 modules)	24 Vdc ±20%	Smart Dupline® bus generator, up to 250 slave modules can be connected
	**SH2WBU230N**	DIN rail (2 modules)	24 Vdc +/-20% 115-240 Vac 50/60 Hz +/-10%	Wireless bus generator, up to 250 slave modules can be connected, based on IEEE EEE 802.15.4, @ 2.4 GHz
	**SH2DUG24**	DIN rail (2 modules)	24 Vdc ±20%	Dupline generator for BH8-CTRLx compatibility

Controllers (CPU)

		Mounting	Power supply	Main features
	**SH2WEB24**	DIN rail (2 modules)	24 Vdc ±20%	Home automation controller with datalogging capability. Linux based PC with 2 USB ports, Ethernet port, 2 RS485 ports, local bus
	**SB2WEB24**	DIN rail (2 modules)	24 Vdc ±20%	Building automation controller with datalogging capability and Bacnet. Linux based PC with 2 USB ports, Ethernet port, 2 RS485 ports, local bus
	**SA2WEB24**	DIN rail (2 modules)	24 Vdc ±20%	Room controller for hotel rooms and flats in condominium blocks

USB adaptor for dongle modem

		Mounting	Power supply	Main features
	**SH2DSP24**	DIN rail (2 modules)	24 Vdc ±20%	For USB dongle modem D-Link DWM 156 and 157, Huawey MS2131
	**HUAWEIMS2131**	USB port	By SH2DSP24	USB 3G DONGLE MODEM
	**SH-MODEMKIT**	-	-	Kit including SH2DSP24 and HUAWEIMS2131

Touch display

		Dimension (mm)	Power supply	Main features
	**BTM-T7-24**	187x147x47	24 Vdc ±20%	Windows CE, 7'', 800 x 480 pixel, Ethernet port
	**BTM-T4-24**	147x107x56	24 Vdc ±20%	Windows CE, 4.3'', 480 x 272 pixel, Ethernet port

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