



Solutions

Building Automation

Building Automation Solutions for



Metering

Lighting control

HVAC systems

Integrated solutions

Parking guidance system

Monitoring and protection

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.

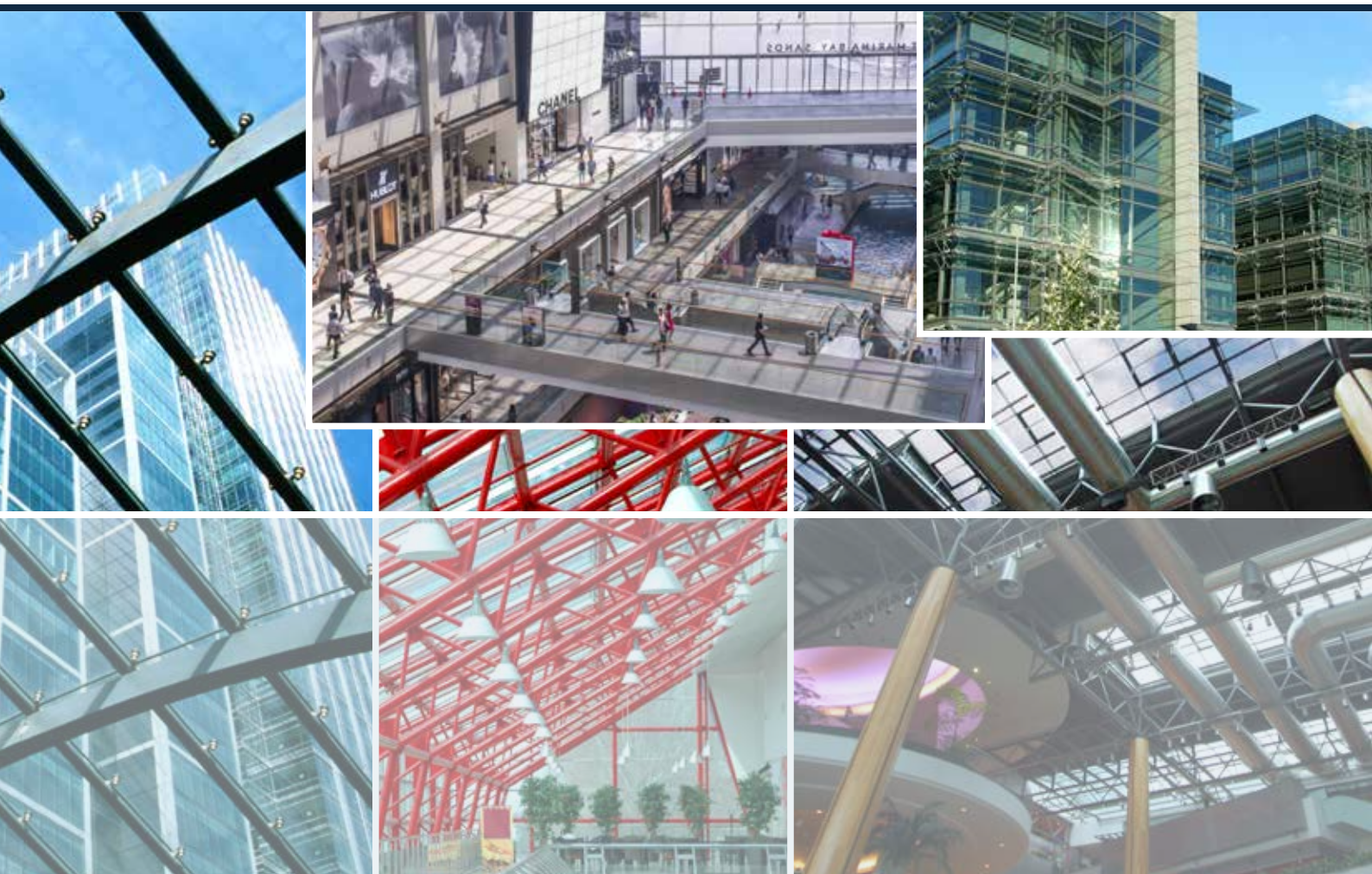
We operate worldwide through 22 of our own sales companies and also selected representatives in more than 65 countries, from the United States in the West to the Pacific Rim in the East.

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 airconditioning devices, and also panel builders, installers and system integrators.



DESIGNED TO MEET MARKET REQUIREMENTS

Building Automation Systems consists of the networking of electronic devices designed to monitor and control the mechanical, security, lighting, HVAC and humidity control and ventilation systems in buildings such as:

- **Shopping malls**
- **Offices**
- **Airports**
- **Hospitals**
- **Schools**
- **Carparks**
- **Production facilities**
- **Logistics centres**

Commercial Buildings and Infrastructures

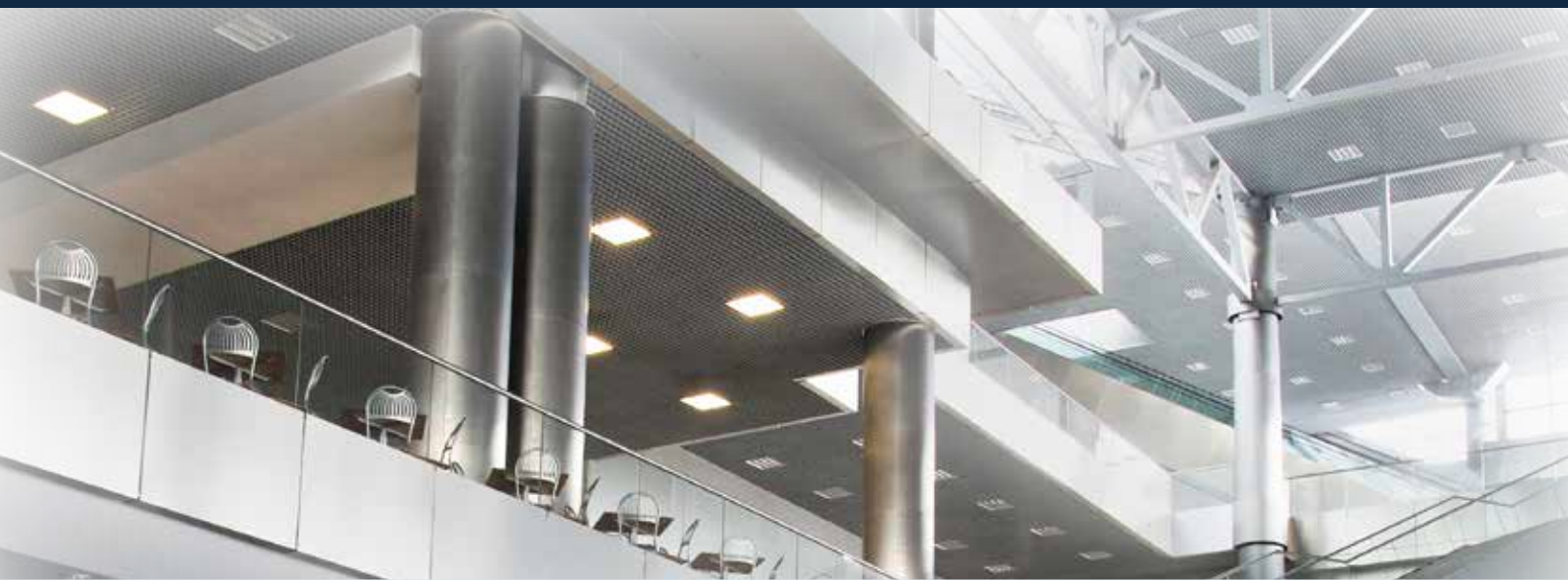
New energy-efficient buildings and the improvement of existing ones are arguably the most important initiatives we can take to reduce energy consumption and limit CO₂ emissions. Energy in these buildings is mainly used for lighting, air-conditioning, ventilation, heating, refrigeration, lifts and motors. The majority of these buildings already exist, so there are great opportunities to improve their energy performance through targeted initiatives, upgrades and retrofitting. To meet the mandatory requirements for energy saving, building owners must comply with efficiency improvement regulations.

Production Facilities and Processes

Predictive maintenance and energy saving are probably the most important issues for improving the efficiency of machinery and reducing overall energy consumption and production downtime. The continuous and efficient operation of equipment is a crucial element in optimising and reducing energy use. In particular, preventing equipment failure through predictive maintenance is very cost effective, both in terms of production output efficiency and in terms of operating costs. High energy users are: motors, electric heaters, lighting systems, air-conditioning units and compressors; all these have to be monitored and optimised in order to reduce energy consumption.

Building Automation

Metering



Energy meters/analyzers

EM24
EM26
EM340

Power quality analyzers

WM40
WM30
WM20

Current transformers

CTD
TCD
ROG4K

Double 3-phase energy analyzers

EM270
EM271
EM280

Gateway and controller

UWP 3.0
Em²-Server

The accurate measurement of energy consumption is the first step in the collection and analysis of the information required for effective energy management. Information about the quality of the power used can improve on-site efficiency and facilitate troubleshooting in the case of any problem to the electrical installation.



In many commercial buildings the need to control and measure the energy consumption of single users is becoming more important for an accurate cost allocation. Our energy meters and data logging systems provide information so that operators can identify consumption trends and take corrective action.

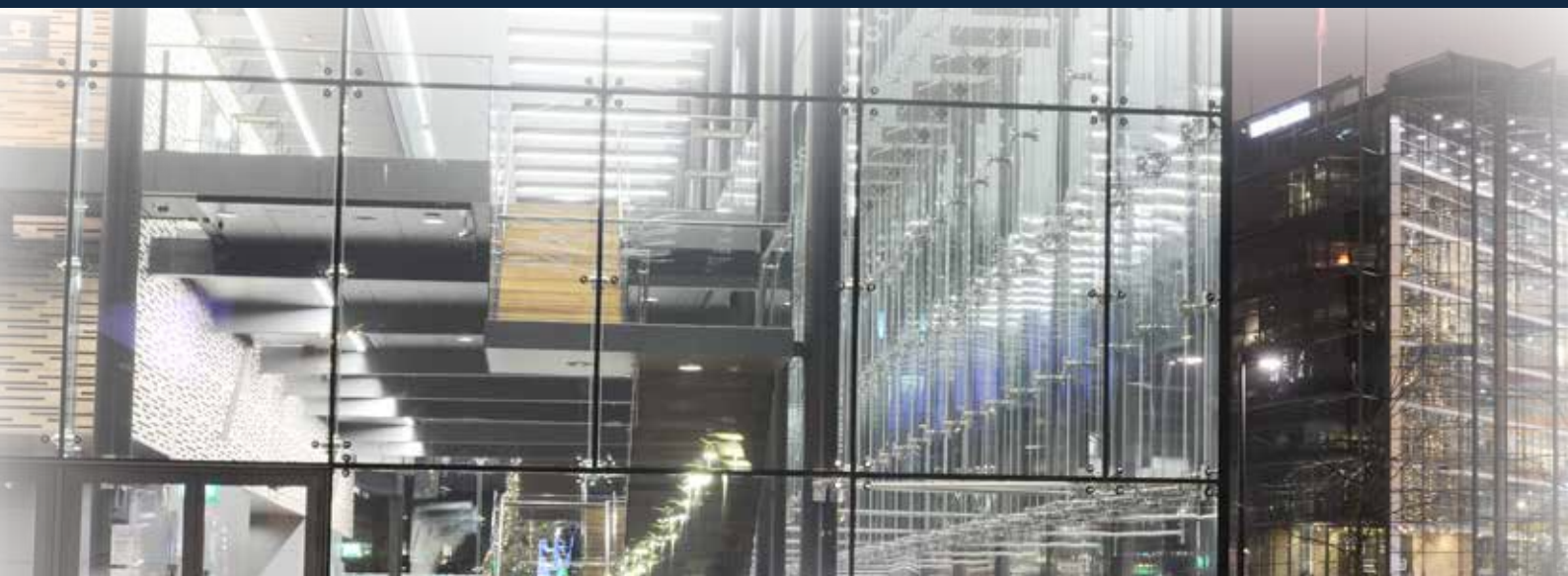
By analysing the energy consumption profile, operators can also aggregate loads and negotiate more favourable tariffs with utility companies. Alarm thresholds can be set to warn if preset limits are reached, so that corrective action can be taken. Real-time power consumption monitoring allows maintenance managers and energy managers to anticipate overloads, avoid

circuit breaks and not exceed contractual tariffs. You can now monitor in detail each single load of the installation thanks to the new Quick-fit energy meters EM270/271/280.

These meters can monitor up to 2 three-phase loads at the same time, or up to 6 single-phase channels. The combination of advanced meters and special solid and split-core current transformers, has been specifically developed to reduce installation and commissioning time.

This innovative solution is not only suitable to be combined with MCCBs for main metering, but also with the 6-channel solid-core and split-core sensing units, MCBs, for sub-metering.

Lighting control



Gateway and controller

UWP 3.0

DALI bus generator

SB2DALI...

PIR + Lux meters

SBQP360L...

Light switches

B..X-LS4...

Analogue input modules

BDB-IN... SHPIN...

Decentral output modules

BDA-RE...

The use of electricity for lighting obviously has a considerable impact on energy consumption in commercial buildings, infrastructures, production facilities and logistic centres.

In the case of hospitals and airports, or in the case of shiftwork, lighting is used 24 hours per day, all year round, heavily impacting on total consumption. Energy bills can be reduced by installing energy-efficient control systems.

Using lighting controls for dimming or turning lights on and off, such as dimmers and luminosity and occupancy sensors, energy efficiency is increased.

- Dimmers reduce the power supplied to the bulbs, limiting consumption and increasing their life cycle.

- Lux sensors dim or turn lights on or off in response to natural lighting levels.
- Presence sensors activate lights when a person is in the area and turn the lights off after the person has left.

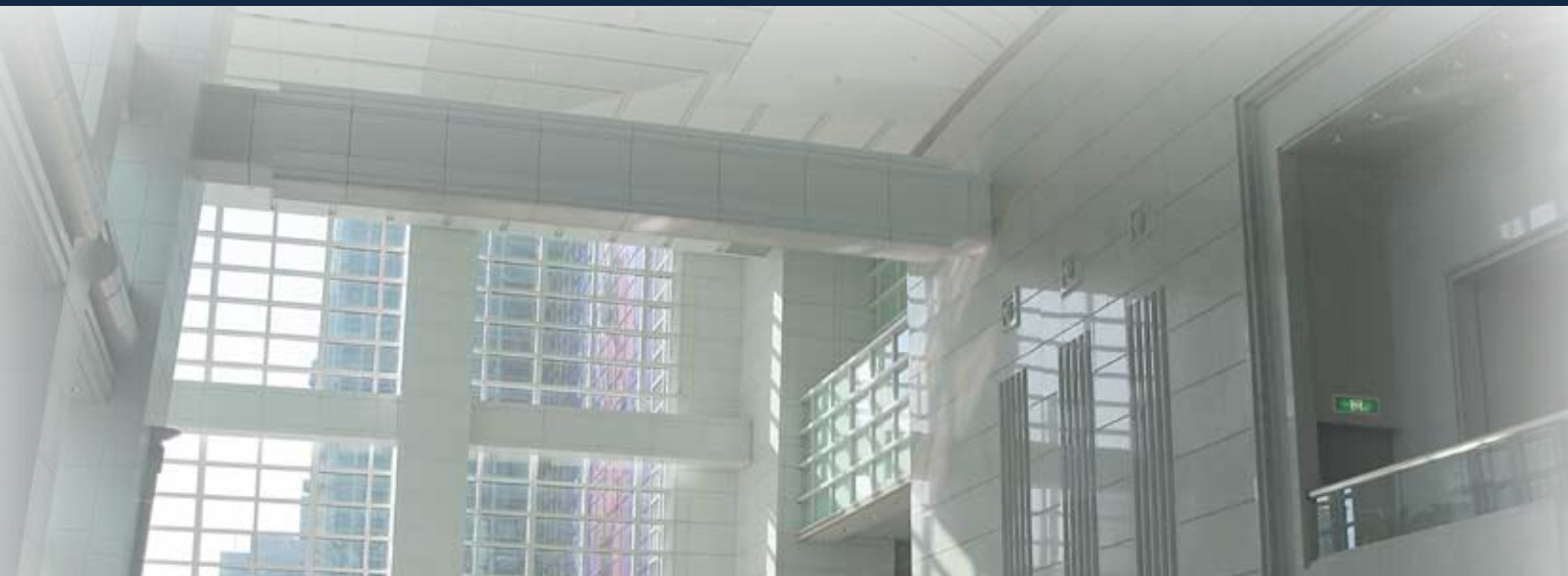
Tunable white DALI control

Thanks to the introduction of the Digital Addressable Lighting Interface (DALI) combined with ever-improving LED technology, all the mainstream LED lighting companies are moving to offer products which can change the white of the light from warm (2500K) to cold (6000K) to follow the behaviour of natural white. This feature is called tunable white and is the capability of changing the temperature (K) of the

colour of the light. Thanks to tunable white, we can now personalise lighting to support the healthy functioning of our circadian rhythms and improve mood, performance, and sense of wellbeing. Such daylight simulation is ideal for use in offices, where we have little access to the beneficial properties of daylight, helping us to feel on top form every day, since static lighting conditions might disrupt our biological rhythms. Warmer temperature is more relaxing, while cooler temperature creates a motivating environment. The UWP 3.0 system can be used to mimic the natural cycle of daylight, or it can be programmed to create specific scenes at certain times of the day.

Building Automation

HVAC systems



Soft starters

**RSBD/RSGD
RSBT/RSWT**

Environmental sensors

**SHSU
ESTHD**

PIR + Lux meters

SHQP360L...

Solid state relays

**RGC1A/RGC1P
RGC2A/RGC2P
RGC3A/RGC3P**

Monitoring relays

**DPA52
DPB52**

Energy meters/analyzers

**EM210
EM110/EM111
EM112**

Commercial buildings and infrastructures, production sites and logistics centres, use a large percentage of energy in HVAC systems.

This is due to the presence of a large number of people who need to be offered the most comfortable environment.

Most of the motors used in ventilation systems are simply switched on and off with no speed control.

Various switching modes are available in the new RGC1P (1-phase) and RGC3P (3-phase) solid state controllers to cater for different application needs, such as phase angle switching for speed

control and light dimming and full cycle switching for temperature control.

The version with soft starting prevents high inrush currents associated with loads which have a high cold/hot resistance ratio.

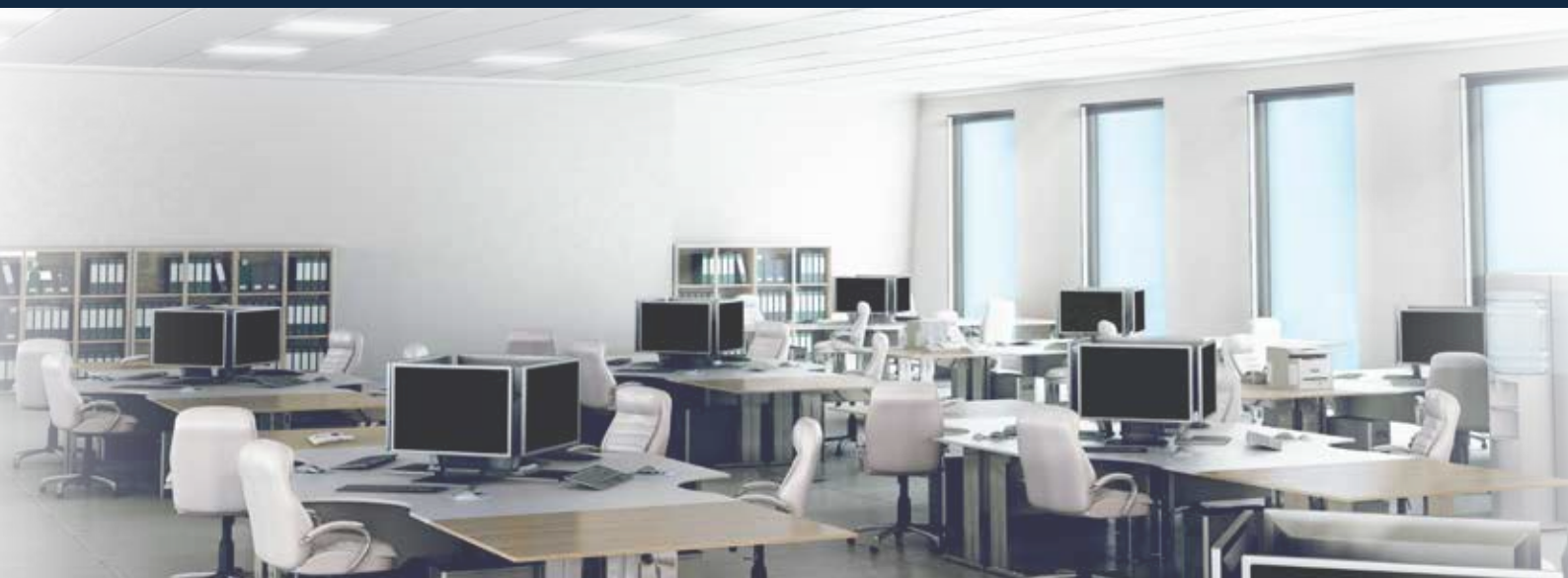
RSBD and RSBT soft starters are used to limit the scroll compressor starting current thereby eliminating light flickering.

RSWT and RSGD soft starters are used to control the acceleration of pumps and ventilators to reduce mechanical stress on the motor shaft.

Presence sensors provide zoned temperature control by setting on/off time schedules for the right climate conditions.



Integrated solutions



Gateway and controller

UWP 3.0

DALI bus generator

SB2DALI...

PIR + Lux meters

SH...P150L...

Light switches

B..X-LS4...

Environmental sensors

SHSU....

Decentral I/O modules

**SHPIN....
BDB-IN...
BDA-RE...**

Carlo Gavazzi's innovative bus technology, Dupline®, allows system integrators to design and build efficient building automation systems integrating lighting control, HVAC and metering at the field level.

The Dupline® bus greatly simplifies the installation and commissioning of a building automation system. Sensors and I/O-modules are bus-powered and designed for de-central installation, hence the cabling is merely a question of multi-dropping the 2-wire bus from module to module.

This provides a significant installation cost reduction compared to the traditional star wiring, where every signal needs a wire back to the

controller, and every module needs power supply connection. Furthermore, the system provides high flexibility for last minute changes and future enhancements, because the 2-wire cable is already available throughout the installation, so it is easy to add extra modules.

The brain in the system is the UWP 3.0 controller, which performs the intelligent functions, and at the same time provides the link to any upper level BMS through BACnet/IP. During configuration, the PC-based programming tool scans the Dupline® network and automatically assigns addresses to all the data points and

creates the relevant BACnet objects. This allows any BACnet compatible DDC controller to use Dupline® as remote I/O by reading and controlling the data points through standard BACnet objects.

In the lighting control system, Dupline® is used for presence and movement detectors (PIR), lux sensors and light switches etc, while the DALI bus is used for the lighting actuators (ballasts).

The DALI controller is a 2-DIN module, which connects to the Dupline® bus at any point. The UWP 3. provides a range of pre-defined lighting functions, including the much used constant light control.

Building Automation

Parking guidance system



Gateway and controller

Carpark bus generator

45° ultrasonic sensors

360° LED indicator

Carpark display adapter

Carpark displays

UWP 3.0

SBP2MCG

SBPSUS

SBPILED

SBP2DI

SBPDIS...

The Carpark system is based on Carlo Gavazzi's expertise in sensing and communications technology within the industrial automation market.

Our patented Dupline® 3-wire bus forms part of a tried and tested network, with more than 150,000 installations worldwide. The system is completely scalable and can be used in any type and size of indoor carpark. In spite of its advanced functions, the system is easy to install and configure, allowing detection, counting and indication of vacant spaces. By means of signs with directional arrows and LED indicators, drivers are guided to the closest vacant parking bay, resulting in considerable time saving,

especially if only few spaces are vacant. Our Parking Guidance System not only provides drivers with more convenience and less stress, but by monitoring the whole situation of the parking area it increases efficiency in car flow, reducing energy costs. Cars can be directed to pre-selected areas of the carpark, while the system ensures that lighting and ventilation systems are disabled in unoccupied zones. Carlo Gavazzi's product range for carpark systems, in addition to the controller, sensors, LED indicators and displays, also includes products for smart building functions.

A unique feature of the system is the possibility to integrate control of

lighting and ventilation into the same structure. Lighting and ventilation are the two biggest energy consumers in a carpark, and often they are simply left ON continuously.

By using demand-based control functions, where lighting and ventilation are switched on when needed, significant savings can be achieved.

By means of its built-in BACnet communication capability, the controller can be seamlessly integrated into any Building Management System. Our CO sensors can monitor the CO level emitted by the vehicles in the car park and provide an alarm in case the CO level reaches a hazardous level.

Monitoring and protection



Power transducers

CPT

Current transformers

E83
A82
MP3

Earth leakage protection relays

DEA71
DEB71

3-phase monitoring relays

DPA52
DPB52

Current monitoring relays

DIA53
DIA01

Surge protection devices

DSF A/P
DSB A/P
DSB51

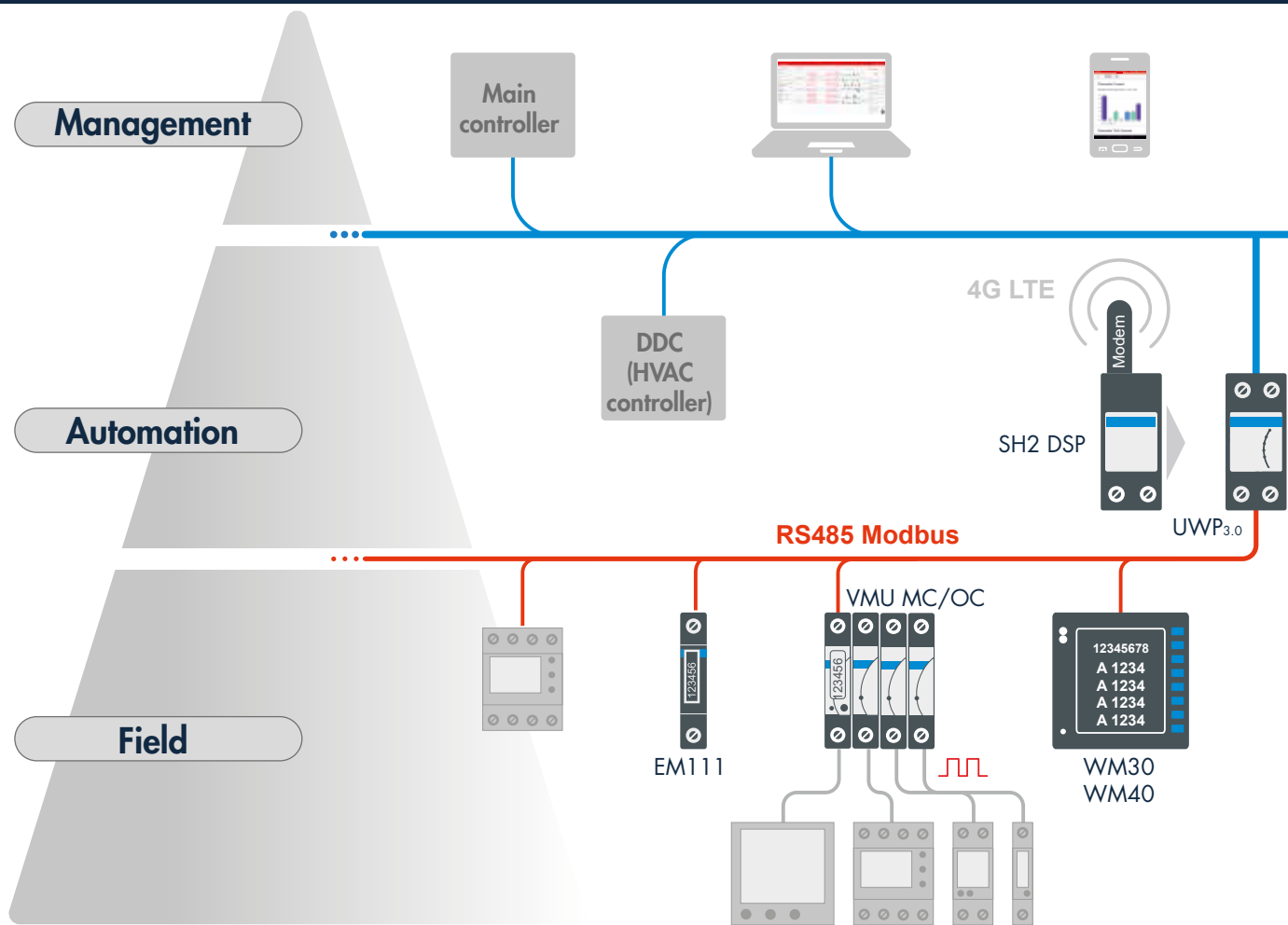
The level and stability of the power supply are fundamental requirements for reliable equipment operation; too low or too high voltage levels could cause failures. It is important to monitor the instant level of voltage as well as voltage sags and transients which may occur over time. In a production facility it is quite common to use and add to electrical loads, especially these with high in-rush current. Voltage sags indicate that a system is not able to respond properly to load requirements, leading to production process interruptions. Monitoring voltage balance in a three-phase power distribution system is crucial for the efficiency of motors and any 3-phase load; an unbalanced supply can cause poor performance of the equipment,

leading to premature motor failure due to increased mechanical stress. Controlling harmonic distortion helps prevent failures of critical equipment such as motors and transformers; the main problems caused by harmonics are overheating of motor windings and transformers, higher susceptibility to voltage sags, excessive current to neutral conductors and noise, all of which reduce the lifespan of the equipment. Within our product range, we can offer devices to monitor the correct level of voltage and frequency of single and 3-phase systems. Phase sequence and loss, along with the voltage, can be detected, notifying the user if a system failure occurs. The voltage level of the start-up battery can also be properly monitored.

We can also offer current monitoring devices capable of sending alarm signals when an over-current situation is detected. Our Surge Protection devices can be used to protect devices connected to the mains. A special range has been developed for the protection of Dupline® buses as well as for RS485 communication lines. The modular residual current devices DEA71 and DEB71 protect electric installations against the risk of fire or electrocution of people, in case of insulation failure. They are able to detect a leak of current to the Protective Earth by means of the external Core Balance Current Transformer (CTG), provide a warning signal at 60% and trip the MCB, through the relay output, when the leakage exceeds 80% of the set fault current.

Building Automation

Energy efficiency and carpark control



The architecture completion

Simplicity, short commissioning time, cost reductions, error proof configuration, expandability and scalability are the key characteristics of UWP 3.0, which make this platform a powerful solution to achieve the Energy Efficiency goals. This means the platform evolves from the pure monitoring introduced in the first part of this solution presentation, to the active control. Although gathering automatically all the meters data is extremely important, this is not enough to achieve the maximum results in terms of energy savings. Therefore, energy efficiency aimed to reduce at maximum the energy costs is the merge of two major actions: monitoring and active load control.

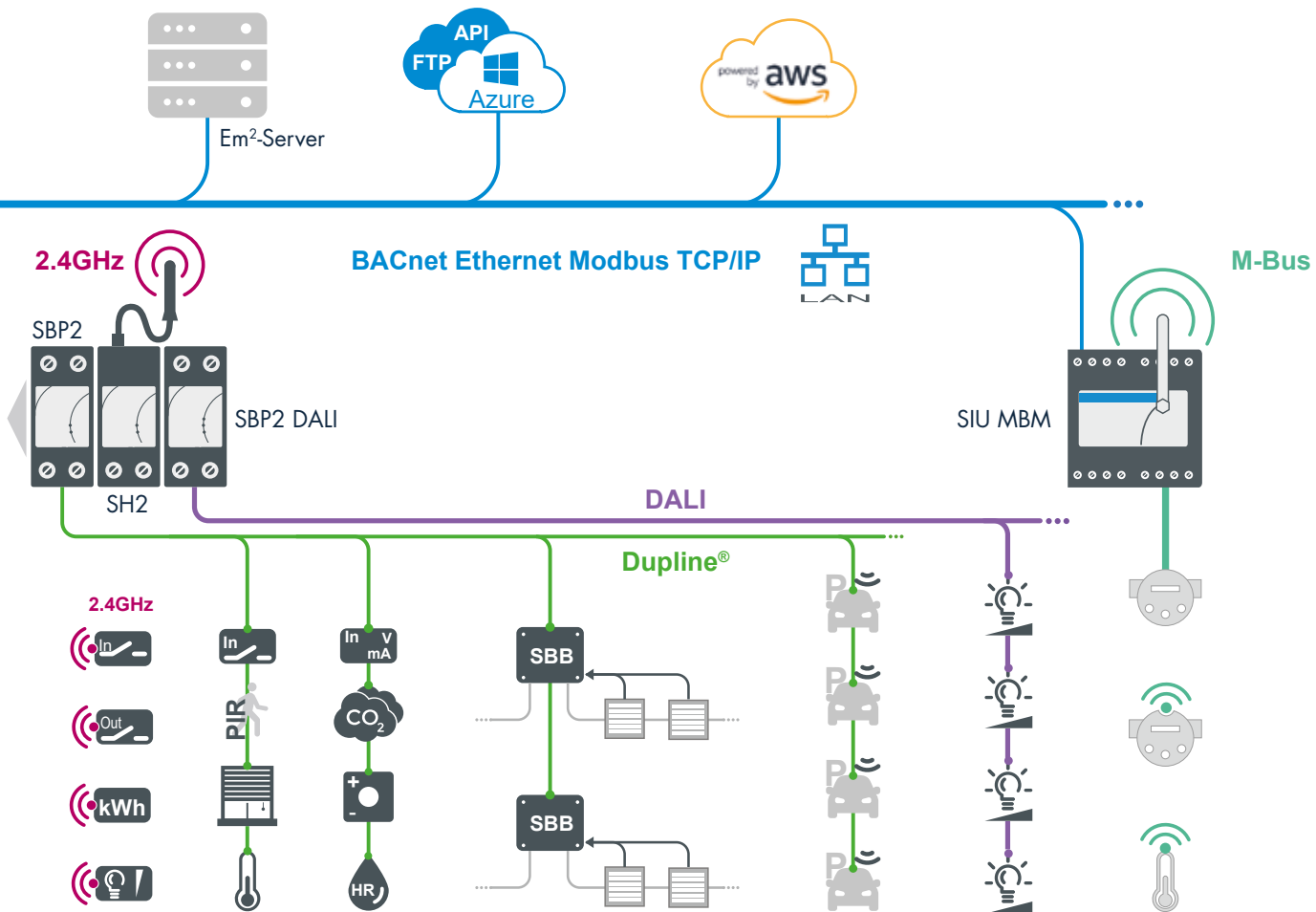
The active control

The active control performed by UWP 3.0 is the capability of this platform to act, at a first level, directly and automatically on the loads but also as a second level to integrate into other management systems.

As a first example, in an industrial plant we can have several buildings like: a production facility with services, offices and a warehouse with different needs in terms of load control and integration. As in the production facility, there are energy intensive loads like: large machines, electric heaters, chillers and air-compressors, all of them have to be monitored and optimised, there is also the need to allocate the energy costs by produced item (see our extensive meter offer).

Energy savings and human efficiency

In the offices there is the need to maximize energy efficiency in relation to the external environmental conditions and people occupancy while providing the highest levels of comfort, safety and quality. Lighting is one of the major areas to focus on, so to reduce electricity costs. A proper controller module based on DALI bus provides a wide range of control strategies to achieve both energy savings and comfort level. Efficiency is not only on energy resources but also on human resources, this means, a modern Company knows that: people engagement, mood and commitment can be easily be boosted up taking care of the work space in terms of CO₂ level (ventilation), temperature (heating and cooling) and illumination (DALI).



From energy efficiency to flow efficiency with the Dupline® smart bus

Last but not least, in the warehouse, the energy focus is on lighting as well, but also on both heating and ventilation. A proper management of those loads and the communication by means of BACnet, will integrate UWP 3.0 platform into a BMS so to complete the offer to achieve the energy efficiency goals.

As an additional example, moving from an industrial installation to a shopping mall or an airport, there is the need to different extents, in addition to what already explained above, to implement energy efficiency strategies also in an indoor car-park or multi-storey garage. In this case, as for the people using the offices, the efficiency is not only on load controls like lighting and ventilation (making

sure they are disabled in unoccupied zones), but more actively also on drivers, providing them automated information where to drive and park the car reducing their stress, thus increasing car flow efficiency and reducing the fuel emissions.

Why Dupline® proprietary smart bus?

Because among all the platform compatible standard field buses, Dupline® in its application context, is the best solution, since it brings numerous benefits like:

- eliminating expensive shielded cable saving money just because it uses a twisted pair (2 wires);
- being extremely noise immune, can run next to power cables;

- carrying the power supply to power the connected sensors;
- simplifying the field level wiring (based on free topology) without increasing the material costs (e.g. using existing cables);
- running the bus signal up to 2km without any repeater;
- being robust with a proven technology with over 150,000 installations Worldwide including not only energy efficiency solutions but also mining, oil drilling, railroads and many others;
- being modular and scalable: the system can be progressively extended with new modules (up to 7) according to the application needs.

Building Automation

Our product range

| Monitoring gateway and controller | Wired bus generator | DALI bus generator | DALI ballast |
|-----------------------------------|---------------------|--------------------|--------------|
|-----------------------------------|---------------------|--------------------|--------------|



UWP 3.0

- Micro PC with embedded Web-Server
- Data and event logging from Modbus, Modbus/TCP and Dupline® devices
- Local gateway functions (to BACNet and Modbus/TCP)
- Remote gateway functions (FTP, SFTP, FTPS, Rest-API)
- Microsoft Azure Certified for IoT
- Huge ecosystem of compatible meters, sensors, actuators

MAIN FEATURES

- Flexible control functions
- Energy efficiency monitoring
- Building automation control
- Car parking guidance



SH2MCG24

- Connection to UWP 3.0 via internal bus or terminals via the high speed bus
- Up to 7 SH2MCG24 can be connected on the same network, considering the sum of SH2MCG24 and SH2WBU24

MAIN FEATURES

- Dimensions: 2-DIN modules
- DC power supply



SB2DALIT8230

- Interfaces the Dupline® bus to standard DALI lighting actuators
- Operates as DALI controller and power supply with possibility to connect up to 64 ballasts to the DALI bus output
- Tunable white control
- Multiple SB2DALIT230 units can be connected to the same Dupline® bus

MAIN FEATURES

- Allows the powerful combination of Dupline® and DALI
- Compact dimension: 2-DIN module
- 230 VAC power supply



SBBADT8CCT

- 2 constant current output channels, total output power up to 50 W
- Output current level selectable from 250 mA to 1500 mA by means of dip switches
- Built-in DALI interface, DT6 and DT8 ballast
- IEC 62386-101, 102, 207 compliance

MAIN FEATURES

- Colour temperature adjustment according to DALI specifications of Device Type 8, Colour Type Tc
- It can work with any DALI master which manages DALI type 8 LEDs

| Repeater modules | Digital input modules 4 inputs | Output modules solid state relay | Relay modules |
|------------------|--------------------------------|----------------------------------|---------------|
|------------------|--------------------------------|----------------------------------|---------------|



SB2REP230

- Regenerates the Dupline® carrier signal
- Output current load up to 300 mA
- Extends network length
- Isolates the primary and secondary Dupline®
- 230 VAC power supply

MAIN FEATURES

- Extends the length of the bus cable
- 230 VAC power supply suitable for decentralised installation
- Compact 2-Din housing



SH2INDI424

- 4 digital inputs NPN, PNP, voltage free
- The 4 inputs can be configured as contact or counter
- LED indication for power supply, Dupline® bus, input activated
- Connection to other cabinet modules via local bus

MAIN FEATURES

- Dimensions: 2-DIN modules
- DC power supply



SH2SSTRI424

- 4 triac output
- Module load: 4 x 10 W
- LED-indications for supply, bus and outputs status
- Connection to other cabinet modules via local bus
- Push button for local on/off switching

MAIN FEATURES

- Dimensions: 2-DIN modules
- DC power supply



SH2RE16A4

- 4 separate outputs relay
- LED-indications for supply, bus and outputs status
- Connection to other cabinet modules via local bus
- Push button for local on/off switching

MAIN FEATURES

- Dimensions: 2-DIN modules
- Bus supplied

Our product range

Relay modules with energy metering


SH2RE16A2E230

- 2 outputs relay
- Power and energy metering
- LED-indications for supply, bus and outputs status
- Connection to other cabinet modules via local bus
- Push button for local on/off switching

MAIN FEATURES

- Dimensions: 2-DIN modules
- 230 V supplied

Decentral output modules


BDA-RE13A-U

- Small sized single relay output
- Load: 16 A/250 VAC
- Withstands 130 A inrush current

MAIN FEATURES

- Bus powered

Up/down control for DC motor


SHDRODC230

- AC powered small dimension 2 x 5 A relay output for control of roller blind motor
- Relay interlock function for roller blind motor protection
- cUL approved

MAIN FEATURES

- Design for mounting in eurobox
- Relay load 5 A

Up/down control for AC motor


SH2ROAC224

- Up/down control of 2 AC rollerblind motors
- LED indication for power supply, Dupline® bus, motor up, motor down
- Connection to other cabinet modules via local bus
- Push button for local on/off switching

MAIN FEATURES

- Dimensions: 2-DIN modules
- DC power supply

Dimmer modules up to 500 W


SH2D500W1230

- Universal dimmer switch for R, L, C up to 500 W and LED loads
- Integrated heat sink for temperature dissipation
- Automatic load detection for L, R, C load
- Connection to other cabinet modules via local bus
- Push button for local on/off switching

MAIN FEATURES

- Dimensions: 2-DIN modules
- 230 V supplied

Dimmer modules 1-10 V


SH2D10V424

- Switching and dimming adjustable ballasts 1 to 10 V
- 4 independent dimmable outputs
- LED-indications for supply, bus and outputs status
- Connection to other cabinet modules via local bus
- Push button for local on/off switching

MAIN FEATURES

- Dimensions: 2-DIN modules
- DC power supply

Dimmer modules with energy metering


SH2D500WE230

- Universal dimmer switch for R, L, C up to 500 W and LED loads
- Integrated heat sink for temperature dissipation
- Energy metering
- Connection to other cabinet modules via local bus
- Push button for local on/off switching

MAIN FEATURES

- Dimensions: 2-DIN modules
- 230 V supplied

Analogue input modules


**SHPINA224 / SHPINV324
SHPINV2T1P124**

- Ranges: 0-10V, 0-20 mA, 4-20 mA
- 24 VDC powered
- Small dimension

MAIN FEATURES

- Small dimension makes it easy to install decentrally
- SHPINV324: 3 x 0-10V inputs
- SHPINA224: 2 x 0-20 mA / 4-20 mA inputs (configurable)
- SHPINV2T1P124: 2 x 0-10V + 1 x 10K3 + 1 x 1-11K inputs

Building Automation

Our product range

Temperature resistor input modules



SHPINN12 SHPINT1P1

- Ranges: Pt1000, Ni1000, 10K3 thermistor, 1-11 K potentiometer
- Bus-powered
- Small dimension

MAIN FEATURES

- Small dimension makes it easy to install with existing meters
- Buspowered, so no local power supply needed
- Option for count reset via Smart Dupline®

Pulse counter modules



SHPINCNT4 SHPINCNTS04

- Pulse counter module with 4 inputs
- Available with standard SO4 inputs and low current inputs
- The count values are stored in non-volatile memory on board
- Input count frequency up to 100 Hz
- Inputs can also be used as digital contact inputs

MAIN FEATURES

- Small dimension makes it easy to install with existing meters
- Buspowered, so no local power supply needed
- Option for count reset via Smart Dupline®

Analogue output modules



SHPOUTV224

- Output modules with two 0-10 V outputs
- Small dimensions for decentralised installations

MAIN FEATURES

- DC power supply

Voltage input modules



BDA-INVOL-U

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

MAIN FEATURES

- Compact housing
- Bus powered

Light switch interfaces



BDB-INCONx-U BDB-IOCP8x-U

- Small-sized 4 or 8 I/O modules
- 4 or 8 contact inputs for push buttons

MAIN FEATURES

- Compact housing
- Bus powered

Light switches



B4X-LS4-U B5X-LS4-U

- 4 individually programmable push button inputs
- 4 individually programmable LEDs for true response
- Bus powered, no external supply required

MAIN FEATURES

- B4X-LS4-U: Developed to fit into wall socket and frames from Fuga, NIKO and Bticino
- B5X-LS4-U: Developed to fit into wall socket and frames from Elko, Gira and Jung

Light switch + temperature and humidity sensor



SHA4XLS4TH SHE5XLS4TH

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

MAIN FEATURES

- SHA4XLS4TH: Developed to fit into wall socket and frames from Fuga, NIKO and Bticino
- SHE5XLS4TH: Developed to fit into wall socket and frames from Elko, Gira and Jung

Temperature displays



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

MAIN FEATURES

- Bus powered
- SHA: Developed to fit into wall socket from Fuga, NIKO and Bticino
- SHE: Developed to fit into wall socket from Elko, Gira and Jung

Our product range

**90° PIR +
Lux meters**

**150° PIR +
Lux meters**

**90° PIR +
Lux meters**

**360° PIR
sensors**



**SHA4XP90L
SHE5XP90L**

- Passive infrared detector (PIR)
- Detects movement and presence
- Indoor and outdoor applications
- Operating angle: 90°
- Lighting measuring range: 0 to 20 K lux

MAIN FEATURES

- Bus powered
- Walk test: LED indication
- Programmable sensitivity



SH..XP150/150L

- Passive infrared detector (PIR)
- Detects movement and presence
- Indoor and outdoor applications
- Operating angle: 150°
- Lighting measuring range: 0 to 20 K lux

MAIN FEATURES

- Bus powered
- Walk test: LED indication
- Programmable sensitivity



**SHSDP90L / SHSBP90L
SHSPP90L**

- Passive infrared detector (PIR)
- Detects movement and presence
- Indoor and outdoor applications
- Operating angle: 90°
- Lighting measuring range: 0 to 20 K lux

MAIN FEATURES

- Bus powered
- Walk test: LED indication
- Programmable sensitivity



**SHQP360L7Mxx
SBQP360L24Mxx**

- Passive infrared detector (PIR) and luxmeter
- Operating distance: 14 m (SHQP360L7Mxx)
- Large operating distance: 24 m (SBQP360L24Mxx)
- Detects movement and presence
- Indoor and outdoor installation
- Operating angle: 360°

MAIN FEATURES

- Bus powered
- Programmable sensitivity
- Programmable detection area (SBQP360L24Mxx)

**Dupline® fire damper
I/O modules**

**Weather
station**

**Lux meters for
outdoor installation**

**Outdoor
temperature sensors**



**SBB4I2024
SBB4I20230**

- Robust I/O-module for decentralised installation near fire dampers
- Designed to control two fire dampers
- 4 contact inputs (voltage-free)
- 2 relay outputs (230 VAC/3 A)
- 24 VAC or 230 VAC power supply

MAIN FEATURES

- Box for decentralised mounting near or directly on fire dampers
- Easy wiring of the system
- Cost-effective design



SHOWEAGPS

- Light, wind, temperature measurement
- Ranges: 0 to 100K lux, 0 to 35 m/s, -40° to 80°C
- Rain sensor included

MAIN FEATURES

- Integrated GPS receiver
- Modbus RS485 protocol



BSH-LUX-U

- Lighting measuring range: 0 to 20K lux
- For indoor and outdoor installation
- Working temperature: -30° to +60°C

MAIN FEATURES

- Easily mountable
- Bus powered



BSI-TEMANA-x-U

- Temperature range: -40° to +60°C
- BSI-TEMANA-U is delivered with a M12 plug
- BSI-TEMANAB-U is delivered with 2 m cable

MAIN FEATURES

- Easily mountable
- Bus powered

Building Automation

Our product range

Wireless bus generators



SH2WBU230N

- Wireless transmission based on IEEE 802.15.4, @ 2.4 GHz
- Maximum slave number: 250
- Up to 7 SH2WBU230N can be connected on the same network
- Connection to UWP 3.0 via internal bus or terminals via the high speed bus

MAIN FEATURES

- Dimensions: 2-DIN modules
- DC power supply

USB dongle connection modules



SH2DSP24

- USB port to supply dongle modems
- Support for Wi-Fi USB key
- Watchdog features to prevent common mobile network glitches

MAIN FEATURES

- Dimensions: 2-DIN modules
- 24 VDC supplied

Wireless light switches



SHE5XWLS4xFx

- Flat design: can be mounted everywhere
- 4 individually programmable push buttons
- Battery supplied
- Range up to 100m open space

MAIN FEATURES

- Temperature sensor
- It can be mounted in many 55x55 frames (see datasheet)

Wireless relays with energy metering



**SHJWRE10AE230
SHJWRE10AE115**

- Smallest housing in the market
- Wireless transmission based on IEEE802.15.4 @ 2.4
- Range up to 700 m in open air
- Load: 10 A/250 VAC

MAIN FEATURES

- Energy metering
- Programmable routing function in two steps
- Mounting into eurobox

Wireless relays with push buttons



**SHJWRE10AEWLS230
SHJWRE10AEBLS230**

- Two capacitive push buttons
- Wireless transmission based on IEEE802.15.4 @ 2.4
- Range up to 700 m in open air
- Load: 10 A/250 VAC

MAIN FEATURES

- Energy metering
- Programmable routing function in two steps
- To substitute Bticino switches

Wireless dimmer with energy metering



**SHJWD200WE230
SHJWD200WE115**

- Smallest housing in the market
- Wireless transmission based on IEEE802.15.4 @ 2.4
- Range up to 700 m in open air
- Universal dimmer switch for R, L, C up to 200 W and LED loads

MAIN FEATURES

- Energy metering
- Programmable routing function in two steps
- Mounting into eurobox

Wireless dimmer with push buttons



**SHJWD200WEWLS230
SHJWD200WEBLS230**

- Two capacitive push buttons
- Wireless transmission based on IEEE802.15.4 @ 2.4
- Range up to 700 m in open air
- Universal dimmer switch for R, L, C up to 200 W and LED loads

MAIN FEATURES

- Energy metering
- Programmable routing function in two steps
- To substitute Bticino switches

Wireless energy meters







**SHJWEM16A230
SHJWEM16A115**





- Smallest housing in the market
- Wireless transmission based on IEEE802.15.4 @ 2.4
- Range up to 700 m in open air
- Energy measurement: kWh
- Instantaneous variables readout: A, V, W, Wdmd, VA,

MAIN FEATURES

- Programmable routing function in two steps
- Mounting into eurobox

Our product range

| Environmental sensors | Environmental sensors | Environmental sensors | Environmental sensors |
|---|--|---|---|
|  <p>ESCO2THWxVDM</p> <ul style="list-style-type: none"> • Wall mounting • CO₂ 2000 ppm or 5000 ppm • 0 to 50°C, 0 to 100% RH • LCD display • Modbus communication and analog output <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Compact housing measuring 3 parameters • Software for easy setting and monitoring • Ideal for building installation |  <p>ESTHW50x</p> <ul style="list-style-type: none"> • Wall mounting • Temperature and humidity 2 in 1 • 0 to 50°C, 0 to 95% RH • 0 to 10 V or 4-20 mA output • Dimensions 85x85x30 mm only <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Compact housing measuring 2 parameters • Simple to install and use • Ideal for building installation |  <p>ESTHD50xM</p> <ul style="list-style-type: none"> • Duct mounting • Temperature and humidity 2 in 1 • -40 to 100°C, 0 to 100% RH • 0 to 10V or 4-20mA output • Modbus communication and analog output <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Compact housing measuring 2 parameters • Ideal for HVAC duct installation • Software for easy setting and monitoring • Temperature and dew point version also available |  <p>ESCO</p> <ul style="list-style-type: none"> • Wall or duct mounting • CO 300 ppm or 500 ppm • High accuracy CO electrochemistry sensor • 0 to 10V or 4-20mA output • Modbus communication and analog output <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Compact housing with electrochemistry sensor • CO sensor ideal for car park installations • Software for easy setting and monitoring |

| Environmental sensors | Carpark bus generator | Carpark server | Carpark display adapter |
|---|---|---|--|
|  <p>SHSU....D SHSU....L SHSU....</p> <ul style="list-style-type: none"> • Room sensors for CO₂, temperature and humidity measurement • Available with display, RGB LED or neutral • Temperature range: -20°C to +50°C • Humidity range: 0 to 100 %RH • CO₂ range: 0 to 2000 ppm <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Easily mountable • Bus powered • Low current consumption |  <p>SBP2MCG324</p> <ul style="list-style-type: none"> • Generator of power and Dupline® bus communication on 3 wire • Connected as a slave to the Carpark controller SBP2WEB24 • Connects up to 90 Carpark sensors via Dupline® 3-wire bus • Powered from 28 VDC • Dimensions: 2-DIN module <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Provides sensors and indicators with power and communication • Provides power and communication for up to 90 ultrasonic sensors • Compact DIN-rail housing |  <p>SBP2CPY24</p> <ul style="list-style-type: none"> • Carpark server with capability of linking up to 10 SBP2WEB24 together • Built-in webserver with user interface for carpark management software • Data export in excel format • Powered from 24 VDC • Dimension: 2-DIN module <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Enables parking guidance solutions for very large carparks • Built-in webserver with user interface for carpark management software • Easy and fast commissioning through central PC-based tool |  <p>SBP2DI48524</p> <ul style="list-style-type: none"> • Dupline® bus to Modbus RS485 display adapter • LEDs for indication of communication status • Powered from 24 VDC • Dimension: 2-DIN module <p>MAIN FEATURES</p> <ul style="list-style-type: none"> • Provides signal conversion between the Dupline® bus and the Modbus display • Compact 2-DIN housing suitable for decentral installation • Easy and fast commissioning through central PC-based tool |

Building Automation

Our product range

45° ultrasonic sensors



SBPSUSL45

- Ultrasonic sensor with 45° detection angle
- Built-in bright RGB LEDs with 360° indication
- Base holders for cable tray, ceiling and pipe mounting
- Dupline® 3-wire bus-powered
- Dimensions: Ø 116 x 76 mm

MAIN FEATURES

- Sensor and indicator in one unit
- Mounting at space entry to achieve optimum visibility
- Highbright multi-colour RGB LED's

Vertical ultrasonic sensors



SBPSUSL

- Vertical sensor to be mounted directly above the car
- Built-in bright RGB LEDs with 360° indication
- Base holders for cable tray, ceiling and pipe mounting
- Dupline® 3-wire bus-powered
- Dimensions: Ø 116 x 76 mm

MAIN FEATURES

- Wide tolerance for mounting position
- Mounting on cable tray, ceiling or pipe
- Operates with external RGB LED indicator

Vertical ultrasonic counting sensors



SBPSUSCNT

- Vertical sensor to be mounted in the driving lane for counting
- Fast reaction time to detect moving cars up to 20 km/h
- Base holders for cable tray, ceiling and pipe mounting
- Dupline® 3-wire bus-powered
- Dimensions: Ø 116 x 76 mm

MAIN FEATURES

- Detection of moving cars up to 20 km/h speed
- Mounting on cable tray, ceiling or pipe
- Easy installation and commissioning

360° LED indicators



SBPILED

- LED indicator to be mounted outside the parking space
- Multi-colour bright RGB LEDs with 360° indication
- Base holders for cable tray, ceiling and pipe mounting
- Dupline® 3-wire bus-powered
- Dimensions: Ø 116 x 76 mm

MAIN FEATURES

- High visibility of bright multi-colour RGB LED's
- 360° visibility
- Mounting on cable tray, ceiling or pipe

Sensors base holders



SBPBASEA / SBPBASEB

- Base holders for Carpark sensors and LED indicators
- To be mounted on rail, ceiling or pipe/tube/conduit
- Dimensions: Ø 116 x 24 mm (type A) / Ø 116 x 44 mm (type B)
- Wire terminals built into base holder for easy change of sensor
- On-board address chip with SIN code

MAIN FEATURES

- Flexible mounting options for rail, ceiling or pipe/tube/conduit
- Spring terminals and chip with SIN-address integrated
- Rugged and robust housing

Carpark displays with symbols+digits



SBPDISxxxx

- Displays with green arrow/red cross for guiding the drivers
- Available with 0-3 digits for vacant space number indication
- Optional blue sign for disabled parking
- Automatic brightness control for high visibility
- Powered from 24 VDC

MAIN FEATURES

- High visibility from more than 50m of distance
- Automatic adjustment of brightness according to surroundings lux level
- Indoor and outdoor use

Carpark displays with digits



SBPDISx

- Displays with 2 to 4 digits to show number of vacant spaces for an area
- Bright white LED digits
- Same display for indoor/outdoor
- Automatic brightness control for high visibility
- Powered from 24 VDC

MAIN FEATURES

- High visibility from more than 50 m of distance
- Automatic adjustment of brightness according to surroundings lux level
- Indoor and outdoor use

Carpark displays with digits



SBPDIS9

- Display with 9 character matrix with clear white LEDs
- Automatic brightness control for high visibility
- Dimensions: 215 x 950 x 45 mm
- Powered from 24 VDC

MAIN FEATURES

- Combines text and digits
- High visibility from more than 50 m of distance
- Automatic adjustment of brightness according to surroundings lux level
- Indoor and outdoor use

Our product range

| Pulse counter with wireless MBUS output | MBUS concentrator | MBUS and wireless MBUS concentrator | Pulse counter concentrator |
|---|-------------------|-------------------------------------|----------------------------|
|---|-------------------|-------------------------------------|----------------------------|



SIU-MBC-XX

- Dimensions 105 x 27 x 60 mm DIN-rail housing
- Pulse counter (2 pulse inputs)
- Wireless MBUS output
- Battery power supply
- Indoor or outdoor installation (IP67)

MAIN FEATURES

- 12 years battery lifetime
- Compatible with SIU-MBM-02 concentrator
- Wireless MBUS T1 mode, 868 MHz



SIU-MBM-01

- Dimensions 95 x 71 x 60 mm DIN-rail housing
- MBUS input
- MODBUS TCP/IP output
- Power supply from 15 to 21 VAC, from 18 to 35 VDC
- Ethernet port

MAIN FEATURES

- Up to 20 MBUS connectable devices
- MBUS network scan feature
- Set-up by UCS software



SIU-MBM-02

- Dimensions 95 x 71 x 60 mm DIN-rail housing
- MBUS and wireless MBUS input
- MODBUS TCP/IP output
- Power supply from 15 to 21 VAC, from 18 to 35 VDC
- Ethernet port

MAIN FEATURES

- Up to 20 MBUS and 32 wireless MBUS connectable devices
- MBUS and wireless MBUS network scan feature
- Set-up by UCS software



VMU-MC

- Dimensions 1 DIN modules
- 2 SO input (pulse counting or ON/OFF monitoring)
- MODBUS output
- 24 VDC power supply
- LCD display
- modular solution (from 2 to 11 SO inputs)

MAIN FEATURES

- Modular solution (from 2 to 11 SO inputs)
- Configuration by UCS Software
- Compatible with Utility meters with SO output

| Pulse counter extension | Cloud multi-site aggregation server | Touch screen/ data logger | Touch screen/ data logger |
|-------------------------|-------------------------------------|---------------------------|---------------------------|
|-------------------------|-------------------------------------|---------------------------|---------------------------|



VMU-OC

- Dimensions 1 DIN modules
- 3 SO input (pulse counting or ON/OFF monitoring)
- Local bus connection to UWP 3.0
- Local bus power supply
- Extension module for UWP 3.0

MAIN FEATURES

- Configuration by UCS Software
- Compatible with Utility meters with SO output



Em²-Server

- Software for energy data management
- Multi-site monitoring management
- Flexible and scalable architecture
- VMware® technology compatibility

MAIN FEATURES

- Load profile management
- Data analysis and benchmark
- Data and event logging
- Customizable graphical synoptic
- All data exported in format compatible with Excel or other spread sheets
- Tariffs and contract management
- Alarms management
- Database replication from up to 100 UWP 3.0



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

MAIN FEATURES

- Ethernet connection
- Wide screen display, 64 K colours
- USB port, SD memory, Modbus RTU serial port



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

MAIN FEATURES

- Ethernet connection
- Wide screen display, 64 K colours
- USB port, SD memory, Modbus RTU serial port

Building Automation

Our product range

Power transducers



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

MAIN FEATURES

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

1-phase energy meters up to 45A



EM110

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

MAIN FEATURES

- Self-powered
- Pulse output
- Sealable terminal covers
- CE, MID (PFB)

1-phase energy analyzers up to 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, 45A

MAIN FEATURES

- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers
- CE, MID (PFA and PFB)

1-phase energy analyzers up to 100A



EM112

- 2 DIN modules
- Backlit touch LCD
- Display backup by supercapacitor
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 8 digits, cl. B (EN50470)
- Measuring inputs: 115/230 VAC, 100 A

MAIN FEATURES

- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers
- CE, MID (PFA and PFB)

3-phase energy analyzers for direct current up to 5A



EM330

- 3 DIN modules
- Backlit touch LCD
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 3x 8-digit, cl. B (EN50470)
- Measuring inputs: 230 to 400 V_L AC, 5 A

MAIN FEATURES

- 90 - 260 VAC/DC
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers
- CE, MID (PFA and PFB), cULus

3-phase energy analyzers for direct current up to 65A



EM340

- 3 DIN modules
- Backlit touch LCD
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 3x 8-digit, cl. B (EN50470)
- Measuring inputs: 230 to 400 V_L AC, 65 A

MAIN FEATURES

- Self-powered
- Dual tariff management
- Pulse output or RS485 Modbus or M-Bus port
- Sealable terminal covers
- CE, MID (PFA and PFB)

3-phase energy analyzers for 5A, CTV or ROG4K



EM210

- 4 DIN modules or 72 x 72 mm
- LCD with two installation options
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering, 3 x 3-digit or 8-digit readout, cl. B (EN50470)
- Voltage inputs: 3x230(400) VAC; Current inputs: 5 A CT (AV version); miniature CTV or Rogowski ROG4K sensors (MV version)

MAIN FEATURES

- Self-power supply (230-400V aux power supply in MID version)
- Pulse output and optionally: RS485 Modbus RTU, high speed (up to 115 kbps)
- Sealable terminal covers
- CE, cULus, MID (only 5A, aux power supply version)

3-phase energy analyzers



EM24 DIN

- 4 DIN modules
- 3-phase energy meters with direct connection
- Current input up to 65 A or 5 A
- Class B (kWh) acc. to EN50470
- Pulse open collector output
- Modbus RTU or Ethernet, M-bus or Dupline® port

MAIN FEATURES

- Direct measurement in a very compact housing to save space
- Suitable for measuring generated and consumed energy
- CE, MID, cULus (only EM24 5A)

Our product range

3-phase energy analyzers



EM26 96

- 96 x 96 mm housing, only 45 mm behind the panel
- 3-phase energy meters with CT/VT connection
- Primary current input: 5 A
- Class B (kWh) acc. to EN50470
- Pulse/alarm outputs
- Modbus communication port

MAIN FEATURES

- Energy analyzer in a very compact housing to save space
- Suitable to measure generated and consumed energy
- CE, MID, cULus

3-phase power analyzers



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, Profibus, BACnet (IP and MS/TP) communication ports

3-phase power quality analyzers



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), Profibus DPVO, and EtherNet/IP communication port available

3-phase power quality analyzers



WM40

- 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
- Optional analogue and digital inputs
- cULus

MAIN FEATURES

- Built-in datalogger 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), Profibus DPVO, and EtherNet/IP communication port available

2x3-phase energy analyzer for MCCBs



EM270 + TCD X

- 4 DIN modules or 72 x 72 mm
- Triple 3-phase energy meter
- Current measurement by triple CT solid core with RJ plug
- Equivalent to class 1 (kWh)
- Two pulse open collectors and serial RS485 outputs

MAIN FEATURES

- Save 90% of the installation time
- Voltage and serial bus daisy chain installation
- Fast and error-proof CT connection with CT ratio self-recognising

2x3-phase energy analyzer for MCBs



EM280 +TCD06BX/BS

- 4 DIN modules or 72 x 72 mm
- 6-channel energy meter
- Current measurement by 6-channel CT blocks with RJ plugs: solid core (TCD06BX)
- Equivalent to class 1 (kWh)
- Two pulse open collectors and serial RS485 outputs

MAIN FEATURES

- Branch monitoring in new and retrofit applications, saving 90% of the installation time
- Voltage and serial bus daisy chain installation
- Fast and error-proof CT connection with CT ratio self-recognition

Universal 2x3-phase energy analyzer



EM271 + TCD M

- 4 DIN modules or 72 x 72 mm
- Triple 3-phase energy meter for retrofit
- Current measurement by triple CT split-core with RJ plug
- Equivalent to class 1 (kWh)
- Two pulse open collectors and serial RS485 outputs

MAIN FEATURES

- Save 90% of the installation time
- Voltage and serial bus daisy chain installation
- Fast and error-proof CT connection with CT ratio self-recognising

Current transformers



CTD / TADK

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

MAIN FEATURES

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

Building Automation

Our product range

Current sensors



CTV

- Split-core current sensors
- Primary currents: 60 to 800 A
- Secondary output: 0.333V AC
- Accuracy class: 1
- CE, cURus approved

MAIN FEATURES

- Very compact split-core sensors ideal for retrofit applications
- Suitable for use with EM210 MV energy analyzer

Rogowski current sensors



ROG4K

- Rogowski coil current sensor
- Primary current up to 4000 A
- Direct connection of the secondary terminals to the meter
- Accuracy class: 1
- CE, cURus approved

MAIN FEATURES

- Ideal for retrofit applications
- Suitable for use with EM210 MV energy analyzer
- Signal conditioning carried out by the meter
- No need of external power supply

AC Current transformers



E83

- Dimensions: 56 x 22.5 x 49 mm
- 7 input ranges from 5 A to 50 A AC
- Output 4-20 mA DC
- No power supply
- CE, cURus approved

MAIN FEATURES

- Easy PLC interfacing
- Automatic output scaling
- LED indication

Current monitoring relays



DIA53

- Dimensions: 81 x 17.5 x 67.2 mm DIN-rail housing with 12 mm hole for current measurement
- Current monitoring relay with built-in current transformer
- 20 A, 50 A or 100 A AC
- Self powered
- CE, cULus, CSA

MAIN FEATURES

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

3-phase monitoring relays



DPA52

- Dimensions: 81 x 17.5 x 67.2 mm DIN-rail housing
- Phase sequence and phase loss, regenerated V detection
- 3 phase AC (own power supply)
- Power supply from 125 to 624 VAC (rated 208 to 480 VAC)
- UL, CSA and CCC

MAIN FEATURES

- Motors protection from reverse running and phase loss
- 1 DIN module width. Suitable NORM panels
- Switching power supply 2.5 VA

3-phase monitoring relays



DPB52

- Dimensions: 81 x 17.5 x 67.2 mm DIN-rail housing
- Phase sequence and phase loss, regenerated V detection
- 3 phase AC (own power supply)
- Power supply from 125 to 624 VAC (rated 208 to 480 VAC)
- UL, CSA and CCC

MAIN FEATURES

- Overvoltage / undervoltage setting with Alarm ON delay
- 1 DIN module width. Suitable NORM panels
- Switching power supply 2.5 VA

Current monitoring relays



DIA01

- Dimensions: 80 x 22.5 x 99.5 mm DIN-rail housing
- Current measurement by internal shunts or external CT
- 5 A full scale
- 24/48 VAC/DC or 115/230 VAC
- UL, CSA, CCC

MAIN FEATURES

- Latch and adjustable hysteresis
- Adjustable current tripping setpoint
- 8 A SPDT relay output

3-phase surge protection devices



DSF A/P

- Suitable for all single phase (A) and three phase (P) utilities
- Available for MCOV 300 V, 385 V, 460 V and 550 V
- 20 kA Inom, 40 kA Imax per pole
- Din rail mounting socket
- CE, UL and CSA. Category IEC / EN Class II / Type 2

MAIN FEATURES

- Optional remote monitoring contact
- Patented topology, no backup fuse required
- Socket with replaceable cartridge

Our product range

| 3-phase surge protection devices | Dupline® surge protection devices | Earth leakage protection relays | Earth leakage protection relays |
|----------------------------------|-----------------------------------|---------------------------------|---------------------------------|
|----------------------------------|-----------------------------------|---------------------------------|---------------------------------|



DSB A/P

- Suitable for all single phase (A) and three phase (P) utilities
- Available for 275V, 385V and 440V
- 20kA Inom, 40kA I_{max} per pole
- Din rail mounting socket
- CE, Category IEC / EN Class II / Type 2



DSB5 1XXDP

- Dimensions 90 x 12 x 71.5 mm DIN-rail housing
- 15Vdc nominal voltage
- 10kA Inom, 20kA I_{max}
- Rated spark overvoltage 184V to 276V
- C1/C2/C3 according to IEC 61643-21



DEA71

- 35 mm Mini-DIN housing
- 2 SPDT 5 A relay outputs
- LED leakage Level indicator
- Power supply from 24 V to 240 VAC
- UL and CE (IEC EN 60947-2 Annex M compliant)



DEB71

- 35 mm Mini-DIN housing
- 2 SPDT 5 A relay outputs
- LED leakage Level indicator
- Power supply from 24 V to 240 VAC
- UL and CE (IEC EN 60947-2 Annex M compliant)

MAIN FEATURES

- Optional remote monitoring contact
- 3 MOVs topology
- Socket with replaceable cartridge

MAIN FEATURES

- Designed for Dupline® communication lines
- Three stage topology with dual GDT
- Socket with replaceable cartridge

MAIN FEATURES

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

MAIN FEATURES

- Adjustable Trip Current Setting from 30 mA to 30 A
- Remote Test / Reset push button input
- Warning Indication and output

| 3-phase scroll compressor soft starters | 3-phase scroll compressor soft starters | 3-phase pump and ventilator soft starters | 3-phase general purpose soft starters |
|---|---|---|---------------------------------------|
|---|---|---|---------------------------------------|



RSBT

- Self-learning algorithm for current reduction
- Operational current: 16 A up to 95 A
- 3-phase controlled & internally bypassed
- Operational voltage: 220 - 480 VAC, 50/60 Hz
- cULus, CCC, VDE

MAIN FEATURES

- Plug and play: no user settings required
- Compact dimensions: 32 A in 45 mm and 95 A in 120 mm wide housing
- Serial communication: Modbus 2-wire (RS485)



RSBD

- Self-learning algorithm for current reduction and current balancing
- Operational current: 12 A up to 95 A
- Operational voltage: 220 - 600 VAC, 50/60 Hz
- Alarm and top of ramp relay outputs
- cULus, CCC, EAC

MAIN FEATURES

- Compact dimensions: 45 A in 45 mm and 95 A in 75 mm wide housing
- Plug and play: no user settings required
- Internally Bypassed



RSWT

- Operational current: 12 A up to 90 A
- 3-phase controlled & internally bypassed
- Ramp-up/Ramp-down time: up to 20 sec
- Operational voltage: 220 - 600 VAC, 50/60 Hz
- PTC input, Alarm - Top of Ramp - Run relay indication
- cULus, CCC, EAC

MAIN FEATURES

- Easy to use and set up: only 3-user adjustments required
- Self-learning algorithm to improve pump starts/stops
- Integrated overload protection (Class 10)



RSGD

- Operational voltage range: 187-440 VAC, 187-660 VAC
- Operational current range: 12 AAC up 100 AAC
- Control voltage: 24 VAC/DC, 110 - 400 VAC
- Auxiliary relays for top of ramp and alarms
- Serial communication (Modbus 2-wire) [RSGD 75mm models]
- cULus, CCC, EAC

MAIN FEATURES

- Easy to use and set-up
- Self-learning algorithm to adapt to different loads

Building Automation

Our product range

2-pole solid state relays



RK

- Dimensions 45 x 58 x 33 (44) mm, panel mounting
- Independent control (RKD2..) or common control (RK2..)
- Ratings: up to 660 VAC, 50 AAC /pole, 75 AAC /pole
- Control input: 4-32 VDC
- CE, cURus, CSA, VDE, EAC

MAIN FEATURES

- Integrated output overvoltage protection
- Pre-attached thermal pad
- Conformant to EN 60335-1

1-phase solid state contactors



RGC1A

- Product width 17.5 mm up to 70 mm, DIN mount
- Rated operational voltage: up to 660 VAC
- Rated current: up to 85 AAC @ 40°C
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus, EAC, VDE, GL (up to 30 AAC)

MAIN FEATURES

- Integrated heatsink
- 100 kA short circuit current rating
- Optional overtemperature protection

3-phase solid state contactors



RGC2A / RGC3A

- Product width 54 mm up to 70 mm, DIN mount
- Rated operational voltage: up to 660 VAC
- Rated current: up to 75 AAC/pole (RGC2A), 65 AAC/pole (RGC3A) @ 40°C
- Control input: 5-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus, EAC, CCC

MAIN FEATURES

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

1-phase proportional controllers



RGS1P / RGC1P

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

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

3-phase proportional controllers



RGC2P / RGC3P

- Product width 54 mm up to 70 mm, DIN mount
- Rated operational voltage: 180 - 660 VAC
- Rated current: up to 75 AAC/pole (RGC2P), 65 AAC/pole (RGC3P) @ 40°C
- Control input: 0-20 mA, 4-20 mA, 12-20 mA, 0-10 V, 0-5 V, 1-5 V, external potentiometer
- CE, cULus, EAC, CCC

MAIN FEATURES

- Integrated output overvoltage protection
- Phase angle, Distributed full cycle or Soft start as switching modes
- Integrated monitoring for SSR and load circuit malfunction

Switching power supplies



SPD

- Output power 5 W to 480 W
- Universal input range of 110-240 VAC or up to 370 VDC
- Short Circuit, overload and overvoltage protection
- PFC > 100 W
- CE, cULus, cURus, UL1310 Class 2 (up to 90W), ISA 12.12.1 Class 1 Div2, TÜV, CCC

MAIN FEATURES

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

Switching power supplies



SPDM

- Output power 30 W to 240 W
- Universal input range of 110-240 VAC or up to 370 VDC
- Short Circuit, overload, overvoltage and over temperature protection
- CE, cULus and cURus (up to 120 W), UL1310 Class 2 (up to 72 W, for 72 W only for 24 VDC models)

MAIN FEATURES

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

Switching power supplies



SPM

- Output power from 7.5 W to 100 W
- Universal input range of 110-240 VAC or up to 370 VDC
- Short Circuit and overload protection
- DIN Rail housing
- CE, cULus, cURus, UL1310 Class 2 (up to 91.2 W), ISA 12.12.1 Class 1 Div2, TÜV

MAIN FEATURES

- UL1310 Class 2 (up to <91 W)
- Adjustable output +/- 10%
- Low voltage LED indication

Our product range

Switching power supplies



SPPC

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

MAIN FEATURES

- Adjustable output +/- 10%
- Compact dimension
- Wide operating temperature range up to 70°C

Switching power supplies



SPUBC/SPUC

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

MAIN FEATURES

- To be used in addition with 12 or 24 V power supply
- Front 30 A replaceable fuse
- Plug and play: no settings needed

Industrial relays and sockets



RSLM

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

MAIN FEATURES

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

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